

**Notice of RCRA Class 1 Permit Modification
in Accordance with 20.4.1.900 NMAC
(incorporating 40 CFR Part 270)**

**Waste Isolation Pilot Plant
Carlsbad, New Mexico**

July 20, 2000

**Notice of RCRA Class 1 Permit Modification
in Accordance with 20.4.1.900 NMAC (incorporating 40 CFR Part 270)**

Consistent with requirements of 20.4.1.900 New Mexico Administrative Code (NMAC) (hereafter referred to as Part 270 or Section 270.XX) the U.S. Department of Energy, Carlsbad Area Office is submitting to the New Mexico Environment Department (NMED) a notice of Class 1 modifications to the Hazardous Waste Facility Permit (NM4890139088-TSDF) for the Waste Isolation Pilot Plant (WIPP). Specifically, this information is provided to comply with the requirements of Section 270.42(a)(1).

The modifications are listed in Table 1. Listed information includes a reference to the applicable section of the permit, a brief description of each item, and the class of the item, as identified in Appendix I to Section 270.42. The relevant permit modification category, as identified in Appendix I, is provided as well. A more complete description of the Class 1 modifications are provided in Attachment A. Several of these modifications are the result of discussions with the NMED regarding Class 1 modifications that were previously submitted. The NMED requested that changes be made in several of the previous modifications to clarify the change or to resolve other difficulties identified by the NMED. Each is discussed separately in Attachment A.

The identified changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment and the modified permit is no less stringent than the current permit.

Table 1. Class 1 Hazardous Waste Facility Permit Modification

No.	Affected Permit Section	Item	Category	Attachment 1 Page #
1	a. B1 b. Table B3-9 c. B3-7 d. Table B6-4 e. D f. D1 g. H h. L	Changes to Class 1 Modifications submitted on November 10, 1999.	A.1 A.3	A-1
2	a. B1 b. B1 c. B1 d. Mod. III, D, E, F, G, M1, M2	Changes to Class 1 Modifications submitted November 15, 1999. Add 100-gallon drum as an approved waste management container	A.1 A.3	A-9
3	a. A, B3 b. H	Changes to Class 1 Modifications submitted November 30, 1999.	A.1	A-19
4	a. B3	Changes to Class 1 Modifications submitted January 7, 2000	A.1	A-22
5	a. Mod II b. H1	Changes to Class 1 Modifications submitted January 25, 2000	A.1	A-27
6	a. P b. P	Changes to procedures as the result of annual review. Change in procedure to make it specific to the groundwater monitoring program	A.1 A.4.a	A-29
7	a. F b. G c. M1 d. O	Update figures of the Waste Handling Building to reflect internal modifications	A.1	A-30
8	a. D1 MSHA Air Quality Monitoring D1 Facility Inspections	Revise the inspection forms to remove unnecessary information and to update reference to applicable procedure.	A.1	A-31
9	a. D1 Fork Lifts Used for Waste Handling	Revise the inspection form to reflect equipment upgrade.	A.1	A-32

10	a. D1 Waste Handling Cranes b. M1	Revise the inspection form to correct equipment designation and to correct typographical errors	A.2	A-36
11	a. Module 1 b. A c. B d. I1 e. I1G	Changes to update general information regarding the Permittees Correct typographical error Changes to update general information regarding the Permittees	A.1 A.2 A.1	A-38
12	a. Module II b. B c. B6	Add State Hazardous Waste Codes to the WIPP Permit	A.1	A-41
13	a. B	Correct references to the Waste Stream Profile Form	A.1	A-43
14	a. B b. B2 c. B3	Revise permit to allow compositing of headspace gas samples	B.1.a	A-44
15	a. B1	Revise permit to clarify leak testing requirements for canisters used for headspace gas sampling.	B.1.a	A-48

Attachment A

Descriptions of the Hazardous Waste Facility Class 1 Permit Modifications

Item 1

Description:

- a. Move the change to the text to provide greater clarity
- b. Delete the moved footnote since it is unnecessary and it is not referenced in the new location.
- c. Correct a typographical error in a Table Reference
- d. Corrects an error in the Temperature specification.
- e. Restores language from the regulation.
- f. Change the wording of “Brudi Lift Attachment” to “Push-Pull Attachment” where appropriate throughout the permit. See redline/strikeout of attached sections of the final permit.
- g. Change to correct grammatical problem.
- h. “Nylon” was deleted in the description of the tubing. It is replaced with “Teflon[®]” as a functional equivalent.

Basis:

- a. This change clarifies the existing text and does not change the requirement.
- b. This change eliminates an unreferenced footnote that is also unnecessary.
- c. This change corrects a typographical error and does not change an existing requirement.
- d. Corrects the text to make the Permit internally consistent.
- e. This change restores language that is specifically required by the regulations
- f. Brudi is a company name. Use of the company name would infer that use of a “Push-Pull Attachment” from another manufacturer was prohibited. Any push-pull attachment that is functionally equivalent to the Brudi-brand currently in use is acceptable. A change in equipment for handling waste is not being described in this notice of modification. Equipment changes, such as like-for-like replacements or upgrades (as identified in Appendix I, A.3), would be subject to a separate permit modification item.
- g. This is a change to correct a grammatical problem in the sentence.
- h. Replace previously deleted tubing type with a functionally equivalent type.

Discussion:

- a. The added text applies to sampling and coring tools, therefore, it is clearer if the

test follows these nouns instead of preceding them.

- b. Copying the footnote from Table B3-8 to B3-9 is unnecessary since Table B3-9 references Table B3-8 and incorporated the footnote accordingly.
- c. Reference in Section B3-7 under Precision is to Table B3-7. The correct reference is Table B3-6.
- d. The permit originally specified two acceptable temperatures for making headspace gas measurements. A modification is needed to make the ranges consistent in all locations.
- e. The original modification intended to remove language that was inaccurate with regard to what was recorded in logbooks. However, no reference to where the required information could be found was included. This change provides that such information may be found in supplementary information.
- f. The item described above is a Class 1 permit modification under Section 270.42, Appendix I, A.1. The most appropriate classification of this change to the permit would be as an administrative and informational change. It is a minor change to the permit necessary to keep it current with facility operations. This item does not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment and the modified permit is no less stringent than the current permit.
- g. Change to correct grammatical problem.
- h. The regulations (as identified in Appendix I, A.3) allow the substitution of equipment with functionally equivalent equipment. The permit originally specified nylon tubing. Teflon® tubing is commonly used for WIPP sampling activities. This modification clarifies that the tubing that will be used will be Teflon®.

Revised Permit Text:

- a. Attachment B1, page B1-17

B1-2b(2) Equipment Blanks

In accordance with SW-846 (EPA 1996), equipment blanks shall be collected from fully assembled (i.e., ~~at least those portions of the sampling equipment that contact the sample~~) sampling and coring tools (i.e., ~~at least those portions of the sampling equipment that contact the sample~~) prior to first use after cleaning at a frequency of one per equipment cleaning batch. An equipment cleaning batch is the number of sampling equipment items cleaned together at one time using the same cleaning method. The equipment blank shall be collected from the fully assembled sampling or coring tool, in the area where the sampling or coring tools are cleaned, prior to covering with protective wrapping and storage. The equipment blank shall be collected by pouring clean water (e.g., deionized water, HPLC water) down the inside of the assembled sampling or coring tool. The water shall be collected in a clean sample container placed at the leading edge of the sampling or coring tool and analyzed for the analytes listed in Tables B3-4, B3-6, and B3-8 of Permit Attachment B3. The results of the equipment blank will be considered acceptable if the analysis indicates no analyte at a concentration greater than three times the

MDLs listed in Tables B3-4 and B3-6 or in the Program Required Detection Limits (**PRDL**) in Table B3-8 of Permit Attachment B3. If analytes are detected at concentrations greater than three times the MDLs (or PRDLs for metals), then the associated equipment cleaning batch of sampling or coring tools shall be cleaned again and another equipment blank collected. Equipment from an equipment cleaning batch may not be used until analytical results have been received verifying an adequately low level of contamination in the equipment blank.

b. Attachment B3, Table B3-9

**TABLE B3-9
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND FREQUENCIES
FOR METALS ANALYSIS**

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action ^a
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet Table B3-8 QAOs	Repeat until acceptable
Laboratory blanks	One (1) per analytical batch	# 3 x IDL (# 5 x IDL for ICP-MS) ^b	Redigest and reanalyze any samples with analyte concentrations which are #10 x blank value and \$ 0.5 x PRQL
Matrix spikes	One (1) per analytical batch	Meet Table B3-8 accuracy QAOs	Nonconformance if %R outside the range specified in Table B3-8
Matrix spike duplicates	One (1) per analytical batch	Meet Table B3-8 accuracy and precision QAOs	Nonconformance if RPDs > values and %Rs outside the range specified in Table B3-8
ICP-MS Tune (ICP-MS Only)	Daily	4 Replicate %RSD # 5; mass calibration within 0.9 amu; resolution < 1.0 amu full width at 10% peak height	Nonconformance if %RSD > 5; mass calibration > 0.9 amu; resolution > 1.0 amu
Initial Calibration 1 blank, 1 standard (ICP, ICP-MS) 3 standard, 1 blank (GFAA, FLAA) 5 standard, 1 blank (CVAA, HAA)	Daily	90-110 %R (80-120% for CVAA, GFAA, HAA, FLAA) for initial calibration verification solution. Regression coefficient \$ 0.995 for FLAA, CVA, GFAA, MAA	Correct problem and recalibrate; repeat initial calibration
Continuing Calibration	Every 10 samples and beginning and end of run	90-110% for continuing calibration verification solution. (80-120% for CVAA, GFAA, HAA, FLAA)	Correct problem and recalibrate; rerun last 10 samples
Internal Standard Area Verification (ICP-MS)	Every Sample	Meet SW-846 Method 6020 criteria	Nonconformance if not reanalyzed at 5 X dilution until criteria are met
Serial Dilution (ICP, ICP-MS)	One (1) per analytical batch	5 X dilution must be #10% D of initial value for sample > 50xIDL	Flag Data if >10% and > 50xIDL

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action ^a
Interference Correction Verification (ICP, ICP-MS)	Beginning and end of run or every 12 hours (8 for ICP) whichever is more frequent	80-120% recovery for analytes Note: Acceptance Criteria and Corrective Action apply only if interferences found in samples at levels greater than ICS A Solution	Correct problem and recalibrate, nonconformance if not corrected
Laboratory Control Samples	One (1) per analytical batch	Table B3-8 accuracy QAOs	Redigest and reanalyze for affected analytes; non conformance if not reanalyzed
Blind audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

^a Corrective action per section B3-13 when final reported QC samples do not meet the acceptance criteria.

Nonconformances do not apply to matrix related exceedances.

^b Applies only to concentrations greater than the PRQL listed in Table B3-8.

^c # 30 percent control limits apply when sample and duplicate concentrations are $\leq 10 \times \text{IDL}$ for ICP-AES and AA techniques, and $\leq 100 \times \text{IDL}$ for Inductively Coupled Plasma—Mass Spectrometry (ICP-MS) techniques. If less than these limits, the absolute difference between the two values shall be less than or equal to the PRQL.

IDL = Instrument Detection Limit
PDP = Performance Demonstration Program
PRQL = Program Required Detection Limit
%R = Percent Recovery
RPD = Relative Percent Difference

c. Attachment B3-7

B3-7 Total Semivolatile Organic Compound Analysis

Quality Assurance Objectives

The development of DQOs specifically for this program has resulted in the QAOs listed in Table B3-6. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program objectives. WAP-required limits, such as the PRQLs, are specified to ensure that the analytical data collected satisfy the requirements of all data users. A summary of Quality Control Samples and associated acceptance criteria for this analysis is included in Table B3-7. Key data-quality indicators for laboratory measurements are defined below.

Precision

Precision shall be assessed by analyzing laboratory duplicates or matrix spike duplicates, replicate analyses of laboratory control samples, and PDP blind-audit samples. Results from measurements on these samples must be compared to the criteria listed in Table B3-7~~6~~. These QC measurements will be used to demonstrate acceptable method performance and to trigger corrective action when control limits are exceeded.

d. Attachment B6, Table B6-4

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HEADSPACE GAS SAMPLING FREQUENCY	
Are procedures in place to ensure that every retrievably stored and newly generated waste containers will undergo headspace gas sampling and analysis? (Section B-3a, -3b)	
Are procedures in place to ensure that all waste containers will be allowed to equilibrate to sampling room temperature for 72 hours prior to sampling (18°–29° C or higher) and that the drum ages specified in Section B1-1a of 142 days for debris waste and 225 days for homogenous and soil/gravel wastes are met? Are procedures in place to ensure that equilibrium time and drum ages are documented? (Section B1-1a)	
HEADSPACE GAS SAMPLING GENERAL REQUIREMENTS	
Are procedures in place to ensure all containers of waste are properly vented through individual carbon composite filters or filters with equivalent VOC dispersion characteristics to ensure that gases are adequately vented and characteristic waste does not develop? (Section B-1c)	
Are procedures in place to ensure waste containers and contents are allowed to equilibrate to the temperature of the sampling area (19.8 °C degrees and higher-Centigrade or higher) by waiting a minimum of 72 hours prior to sampling and that S3000 and S4000 wastes are sampled a minimum of 225 days after packaging? (Section B1-1a)	

e. Attachment D

Requirements of 20 NMAC 4.1.500 (incorporating 40 CFR §264.15(d)), are met by the inspections for each item or system included in Table D-1. The results of the inspections are maintained for at least three years. The inspection logs or summary records include the date and time of inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions. Major pieces of waste handling equipment use proceduralized inspections as shown in Permit Attachment D1. The status of these pieces of equipment is maintained in an equipment logbook that is separate from the checklist. The logbook contains information regarding the condition of the equipment. Equipment operators are required, by the inspection checklist, to consult the logbook as the first activity in the inspection procedure. This logbook is maintained in the operating record. Equipment that is controlled by a logbook includes the waste handling fork lifts, all waste handling cranes, the adjustable center of gravity lift fixture, the CH transuranic (TRU) underground transporter, the conveyance loading car, the trailer jockey, and the Brudi push-pull attachment. In addition to the inspections listed in Table D-1, many pieces of equipment are subject to regular preventive maintenance. This includes more in- depth inspections of mechanical systems, load testing of lifting systems, calibration of measurement equipment and other actions as recommended by the equipment manufacturer or as required by DOE Orders. These preventive maintenance activities along with the inspections in Table D-1 make mechanical failure of waste handling equipment unlikely. The WIPP Safety Analysis Report (DOE, 1995a) contains the results of a systematic analysis of waste handling equipment and the hazards associated with potential mechanical failures. Equipment subject to failures that cannot practically be mitigated is retained for analysis and are the basis for contingency planning. The documents in Permit Attachment D1 are for operational and preventive maintenance, to assure the equipment is maintained.

f. 1. Attachment D1, **Fork Lifts Used for Waste Handling**, Inspection Sheet WP 05-WH1401

1.2.3 If Brudi Push/Pull Fixture is going to be used, perform the following:

Verify **NO** obvious cracks, breaks, bends, twists, or wear exist

Verify hydraulic hoses are **NOT** crushed, damaged, or leaking
Fixture is properly secured to forklift

1.2.4 If Drum Handler is to be used, perform the following:

Verify **NO** obvious cracks, breaks, twists, or wear exist
Verify safety chain is installed around load backrest.

1.3 Adjust seat to provide easy access to all controls.

1.4 Verify seat locking mechanism locks.

1.5 Sit in seat and fasten seat belt.

1.6 Verify the following controls are in NEUTRAL:

Directional Control Lever
Hoist Control Lever
Tilt Control Lever
Fork Position Lever
Side Shift Lever

1.7 Press service brake pedal.

1.8 To start forklift, turn key to ON.

1.9 Immediately investigate any unusual noises.

1.10 After forklift starts, check the following:

Battery Charge Meter is in GREEN band.
Horn sounds
Front lights illuminate
Back lights illuminate
Hoist Control raises and lowers forks.
Control tilts forks forward and backward.
Fork Position Control operates the following:
- With forks installed, moves forks in and out
- With ~~Brudi~~ Push/Pull Fixture installed, retracts and extends ~~Brudi~~ Push/Pull Clamping Device
- With SWB Box Fixture installed, Fork Position Control is not applicable
Fork Side Shift Control operates forks left and right.

f. 2. Attachment D1, **Push-Pull Attachment**, Inspection Sheet WP 05-WH1401

1.2.3 If ~~Brudi~~ Push/Pull Fixture is going to be used, perform the following:

Verify **NO** obvious cracks, breaks, bends, twists, or wear exist
Verify hydraulic hoses are **NOT** crushed, damaged, or leaking
Fixture is properly secured to forklift

g. Attachment H Course Description for SAF-515A Confined Space/Heated Environment Refresher (pertinent sections)

COURSE:	SAF-515A - Confined Space
DURATION:	4 Hours
PREREQUISITES:	SAF-515 - Confined Space Initial Training SAF-630/631 - Respiratory Protection Current OPS-08 Qual Card
SCOPE:	The instructor will present hazards, personal protective equipment requirements, emergency action, and compliance with regulatory and WIPP procedures involving confined space. The course will also review several confined space fatalities lessons

	learned.
TYPE:	Classroom
OBJECTIVES:	<p>Upon completion of this course, the student will be able to describe the WIPP's Confined Space Program</p> <p>Mastery of the terminal objective will be demonstrated by scoring 80 percent or higher on the course examination</p>
REFRESHER:	Annually

h. 1. Attachment L-4c(2)(i)

The DMP wells will be cased and screened through the production interval with materials that do not yield contamination to the aquifer or allow the production interval to collapse under stress (high epoxy fiberglass). Details of well construction are presented in Section L-3b(1). An electric, submersible pump installation without the use of a packer will be used in this instance. The largest amount of discharge from the submersible pump will take place from a discharge pipe. In addition to this main discharge pipe a dedicated **Teflon**[®] sample line, running parallel to the discharge pipe, will also be used. Flow through the pipe will be regulated on the surface by a flow control valve and/or variable speed drive controller. Cumulative flow will be measured using a totalizing flow meter. Flow from the discharge pipe will be routed to a discharge tank for disposal.

The dedicated **Teflon**[®] sampling line will be used to collect the water sample that will undergo analysis. By using a dedicated **Teflon**[®] sample line, the water will not be contaminated by the metal discharge pipe. The sample line will branch from the main discharge pipe a few inches above the pump. Flow from the sample line will be routed into the sample collection area. Flow through the sample collection line will be regulated by a flow-control valve. The sample line will be insulated at the surface to minimize temperature fluctuations.

h. 2. Attachment L-4c(2)(ii)

The three field indicator parameters of temperature, Eh, and pH will be determined by either an "in-line" technique, using a self-contained flow cell, or an "off-line" technique, in which the samples will be collected from a **Teflon**[®] sample line at atmospheric pressure. The iron, divalent cation, chloride, alkalinity, specific conductance, and specific gravity samples will be collected from the **Teflon**[®] sample line at atmospheric pressure. Because of the lack of sophisticated weights and measures equipment available for field density assessments, field density evaluations will be expressed in terms of specific gravity, which is a unitless measure. Density is expressed as unit weight per unit volume.

New polyethylene containers will be used to collect the serial samples from the **Teflon**[®] sample line. Serial sampling water collected for solute and specific conductance determinations will be filtered through a 0.45 micrometers (µm) membrane filter using a stainless-steel, in-line filter holder. Filtered water will be used to rinse the sample bottle prior to serial sample collection. Unfiltered ground water will be used when determining temperature, pH, Eh, and specific gravity. Sample bottles will be properly identified and labeled.

h. 3. Attachment L-4c(2)(iii)

Water samples will be collected at atmospheric pressure using either the filtered or unfiltered **Teflon**[®] sampling lines branching from the main sample line. Detailed protocols, in the form of procedures, assure that final samples will be collected in a consistent and repeatable fashion. WIPP Procedure WP 02-EM1006 defines the requirements for collection of final samples for

analyses (Permit Attachment P).

Item 2

Description:

- a. Restore requirement that was deleted as an option for the generator/storage site.
- b. Insert the words “except for Waste Material Type II.2 packaged in a metal container” in section B1-1a, page B1-1.
- c. Modify the text of the permit to allow the use of non-glass items.
- d. Allow ten drum overpacks (TDOPs) and 85-gallon overpacks to be directly loaded with waste. Allow the use of a 100-gallon container.

Basis:

- a. These changes allow the generator/storage sites the flexibility needed in implementing an effective coring program.
- b. Revision 18 to the TRUPACT-II SAR, Section 2.8.1 states that these containers are allowed. This change makes this permit consistent with the applicable transportation requirement. Solid inorganic materials packaged in cans have an effective “G” value of zero. The effective G-values take into account self-absorption of alpha decay energy inside particulate contamination and the fraction of energy absorbed by non gas-generating materials. A value of zero indicates that the gas generation potential is no-existent and that such containers do not have to be vented.
- c. Chapter 3 of SW-846 allows the use of non-glass containers for inorganic analysis, however, Table 4-1 of Chapter 4 specifies glass containers for all organic analyses. This modification allows the use of non-glass containers for handling radioactive samples. This practice is standard in radioactive sample laboratories and is an important safety condition to minimize the change of a spill of radioactive materials due to breakage of the glass.
- d. Current language in the permit states that the ten-drum overpack (TDOP) may contain ten standard drums or a standard waste box (SWB). This change allows TDOPs to be directly loaded with waste. This item would allow the generators to avoid, where appropriate, the disassembly/handling of large items such as gloveboxes that could be directly loaded into a TDOP. As the TDOP is a metal container, that meets DOE specification 7A, this change merely provides for more flexibility in the use of already approved containers.

Current language in the permit states that the standard waste box (SWB) and that an 85-gallon (322-liter) drum may be used for overpacking contaminated 55-gallon drums or site-derived waste. This change allows 85-gallon (322-liter) drums to be direct loaded with waste. This change would allow the generators to avoid, where appropriate, the disassembly/handling of large items that could be directly loaded into a 85-gallon (322-liter) drum. As the 85-gallon (322-liter) drum is a metal container, that meets DOE specification 7A, this change merely provides for more flexibility in the use of already approved containers.

One generator has proposed to use 100-gallon (379 liter) containers for disposal of TRU mixed waste. This containers would be used for repackaging of compacted 55-gallon drums.

Discussion:

- a. These items provides flexibility in meeting a requirement in the permit. Making them optional is based on actual operating experience with coring TRU mixed waste. The methods are unnecessary in every situation and therefore can be deleted in those cases.
- b. This item is being resubmitted as a Class 1 modification with additional discussion for the change. The change maintains consistency with the transportation requirements dictated by the Nuclear Regulatory Commission.
- c. This item is being resubmitted as a Class 1 modification with additional discussion for the change. The change assures safe sample handling in the laboratory.
- d. This is are submittal of a previous Class 1 change with a clarification of the revised language and the addition of the 100-gallon drum as an acceptable container. These changes provide flexibility for the generator to manage waste and have no impact on the management or handling at he WIPP facility. The changes do not adversely affect human health or the environment and do not diminish the ability of the WIPP to safely dispose TRU mixed waste.

Revised Permit Text:

a. Attachment B1-2a(1)

- ! Coring tools ~~shall~~ **may** have an air-lock mechanism that opens to allow air inside the liners to escape as the tool is pressed into the waste (e.g., ball check valve). **If used, t**his air-lock mechanism shall also close when the core is removed from the waste container.
- ! After disassembling the coring tool, a device (extruder) to forcefully extrude the liner from the coring tool shall be used if the liner does not slide freely. All surfaces of the extruder that may come into contact with the core shall be cleaned in accordance with the requirements in Section B1-2(b) prior to use.
- ! Coring tools shall be of sufficient length to hold the liner and shall be constructed to allow placement of the liner leading edge as close as possible to the coring tools leading edge.
- ! All surfaces of the coring tool that have the potential to contact the sample core or sample media shall be cleaned in accordance with the requirements in Section B1-2(b) prior to use.
- ! The leading edge of the coring tools ~~shall~~ **may** be sharpened and tapered to a diameter equivalent to, or slightly smaller than, the inner diameter of the liner to reduce the drag of the homogenous solids and soil/gravel against the internal surfaces of the liner, thereby enhancing sample recovery.

b. Attachment B1-1a

The Permittees shall require all headspace-gas sampling be performed in an appropriate radiation containment area on waste containers that are in compliance with the container equilibrium

requirements (i.e. 72 hours at 18E C or higher). All waste containers designated as summary category S5000 (Debris waste) shall be sampled for headspace gas a minimum of 142 days after packaging and all waste containers designated as summary categories S3000 (Homogenous solids) and S4000 (Soil/gravel) shall be sampled a minimum of 225 days after packaging. This drum age criteria is to ensure that the drum contents have reached 90 percent of steady state concentration within each layer of confinement (Lockheed, 1995). The equilibrium time and drum age of all containers will be documented in headspace gas sampling documents. All waste containers with unvented rigid containers greater than 4 liters, **except for Waste Material Type II.2 packaged in a metal container**, shall be subject to innermost layer of containment sampling or shall be vented prior to initiating drum age and equilibrium criteria. The configuration of the containment area and remote-handling equipment at each sampling facility are expected to differ. Headspace-gas samples will be analyzed for the analytes listed in Table B3-2 of Permit Attachment B3.

c. 1. Attachment B1, Table B1-4, Footnote e

~~°Opaque glass container,~~ **Appropriate containers should be used and should have** ~~shall have~~ Teflon® lined caps ~~(example, amber jar).~~

c. 2. Attachment B1-2a(2)

C Samples of homogenous solids and soil/gravel for VOC analyses shall be collected prior to extruding the core from the liner. Three sub-samples will be collected from the vertical core to form a single 15-gram composite sample. Smaller sample sizes may be used if method PRQL requirements are met for all analytes. The sampling locations shall be randomly selected within three equal-length subsections of the core along the long axis of the liner and access to the waste shall be gained by making a perpendicular cut through the liner and the core. The Permittees shall require sites to develop documented procedures to select, and record the selection, of random sampling locations. True random sampling involves the proper use of random numbers for identifying sampling locations. The procedures used to select the random sampling locations will be subject to review as part of annual audits by the Permittees. A sampling device such as the metal coring cylinder described in EPA's SW-846 Manual (1996), or equivalent, shall be immediately used to collect the sample once the core has been exposed to air. Immediately after sample collection, the sample shall be ~~extruded into 40-ml volatile organics analysis (VOA) vials (or other containers specified in appropriate SW-846 methods)~~ **placed in an airtight sample container for VOA analysis**, the top rim of the ~~vial~~ **container** visually inspected and wiped clean of any waste residue, and the ~~vial~~ **cap** secured. Sample handling requirements are outlined in Table B1-4. Additional guidance for this type of sampling can be found in SW-846 (EPA 1996).

d. 1. Module III.C.1.c

Ten-drum overpack (TDOP) - with a **gross internal capacity of 160 ft³ (4.5 m³)** to be direct loaded with CH-TRU/CH TRU-mixed waste, or to contain up to ten standard 55-gallon drums or one SWB.

d.2. Module III.C.1.d

85-gallon (322-liter) drum overpack - with a gross internal volume of 11.3 ft³ (0.32 m³). 85-gallon drums may be direct loaded with CH-TRU/CH-TRU-mixed waste or may be used for overpacking contaminated 55-gallons drums containing CH TRU mixed waste or for collecting ~~and storing~~ derived waste.

d.3. Module III.C.1.e

100-gallon (379-liter) drum - with a gross internal volume of 13.4 ft³ (0.38 m³). 100-gallon drums may be direct loaded with CH TRU mixed waste or may be used for overpacking several compacted containers containing CH TRU mixed waste.

d.4. Attachment D-1b(1)

Containers are used to manage TRU mixed waste at the WIPP facility. These containers are described in Permit Module III. Off-site CH TRU mixed waste will arrive in 55-gallon drums arranged as seven (7)-packs, as 100-gallon drums arranged as 3-packs, as 85-gallon drums arranged as 4-packs, as Ten Drum Overpacks (TDOP), or as standard waste boxes (SWB). The waste containers will be visually inspected to ensure that the waste containers are in good condition and that there are no signs that a release has occurred. This visual inspection shall not include the center drums of 7-packs and waste containers positioned such that visual observation is precluded due to the arrangement of waste assemblies on the facility pallets. If waste handling operations should stop for any reason with containers located on the TRUPACT-II Unloading Dock (TRUDOCK storage area of the WHB Unit) in the TRUPACT-II shipping containers, primary waste container inspections could not be accomplished until the containers of waste are removed from the shipping containers.

d. 5. Attachment E-1b

At all times, written procedures ensure that loaded TRUPACT-II containers, facility pallets, 7-packs, 3-packs, SWBs, 85-gallon drums, 100-gallon drums, TDOPs, or canisters are managed in the WHB Unit in a manner to prevent obstructing the movement of personnel, fire-protection equipment, spill-control equipment, and decontamination equipment. An aisle space of 44 in. (1.1 m) between loaded facility pallets will be maintained in all waste storage areas of the WHB Unit, and a minimum of 4 ft of aisle space will be maintained between TRUPACT-IIs in the outdoor Parking Area Unit.

d. 6. Attachment E-2a

An overhead 6-ton (5.4-metric ton) crane and adjustable center-of-gravity lift fixture transfer TRU mixed waste containers from the TRUPACT-II to the facility pallet on the WHB Unit floor. The facility pallet is a fabricated steel structure designed to securely hold waste containers. Each facility pallet has a rated load capacity of 25,000 lb (11,340 kg). The upper surface of the facility pallet has two recesses sized to accept the waste containers, ensuring that the containers are held in place. Up to four SWBs, four 3-, 4- or 7-packs, ~~two 4-packs consisting of 85-gallon overpacks~~, or two TDOPs may be placed on a facility pallet. Each stack of waste containers is strapped down to holding bars in the top reinforcement plate of the facility pallet to avoid spillage during movement. Two rectangular tube openings in the bed allow the facility pallet to be securely lifted by forklift. In order to assure a facility pallet is not overloaded, operationally it will hold the contents of two TRUPACT-IIs, Permit Attachment M1.

d. 7. Attachment F-1

Description of Containers

CH TRU mixed waste containers will be either 55-gallon (gal) (208-liter (L)) drums singly or arranged into seven (7)-packs, 85-gal (321-L) drums (used as overpacks) singly or arranged into four (4)-packs, 100-gal (379 L) drums singly or arranged into 3-packs, ten-drum overpacks

(**TDOP**), or 66.3 ft³ (1.88 m³) SWBs.

Description of Surface Hazardous Waste Management Units

The WHB Unit is the surface facility where waste handling activities will take place. The WHB Unit has a total area of approximately 84,000 square feet (ft²) (7,803 square meters [m²]) of which 33,175 ft² (3,083 m²) are designated for the waste handling and container storage of CH TRU mixed waste. This area is being permitted as a container storage unit. The concrete floors are sealed with an impermeable coating that has excellent resistance to the chemicals in TRU mixed waste and, consequently, provide secondary containment for TRU mixed waste. In addition, a Parking Area Unit south of the WHB will be used for storage of waste in sealed shipping containers awaiting unloading. This area is also being permitted as a container storage unit. The sealed shipping containers provide secondary containment in this hazardous waste management unit (**HWMU**).

CH Bay Operations

The typical processing rate for CH waste is 14 TRUPACT-IIs per day, and the maximum is 28 per day. Two shifts per day are planned; four days per week. The fifth day is for equipment maintenance with weekends available for more extensive maintenance, when necessary.

Once unloaded from the TRUPACT-IIs, CH waste containers (**3-packs**, 7-packs, SWBs, or TDOPs) are placed in one of two positions on the facility pallet. The **3-packs**, 7-packs or SWBs are stacked, as they arrive in the TRUPACT-II, on the facility pallets (one- or two-high, depending on weight considerations). The use of facility pallets will elevate the waste approximately 9.5 inches (in.) (24 centimeters [cm]) from the floor surface. Pallets of waste will then be relocated to the northeast area of the CH bay for normal storage. This storage area will be clearly marked to indicate the lateral limits of the storage area. This storage area will have a maximum capacity of seven facility pallets of waste during normal operations. These pallets will typically be staged in this area for a period of up to five days.

In addition, four TRUPACT-IIs, containing up to eight **3-packs**, 7-packs or SWBs or four TDOPs, may occupy the staging positions at the TRUPACT-II Unloading Docks (**TRUDOCK**).

d. 8. Attachment G1

The TRUPACT-II may hold up to two **three-packs**, seven-packs, ~~two~~ **or** standard waste boxes (**SWB**), or one ten-drum overpack (**TDOP**). A six-ton overhead bridge crane will be used to remove the contents of the TRUPACT-II. Waste containers will be surveyed for radioactive contamination and decontaminated or returned to the TRUPACT-II as necessary.

Each facility pallet will accommodate four seven-packs, **four three-packs of 100-gallon drums**, four SWBs, four four-packs of 85-gallon drums, two TDOPs, or any combination thereof. Waste containers will be secured to the facility pallet prior to transfer. A forklift will transport the loaded facility pallet to the conveyance loading car inside the air lock at the Waste Shaft (Figure G-3). The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed out.

d. 9. Attachment M1-1b

100-Gallon Drum

100-gal (379-L) drums meet the requirements for U.S. Department of Transportation (DOT) specification 7A regulations.

A 100-gal (379-L) drum has a gross internal volume of 13.4 cubic feet (ft³) (0.39 cubic meters (m³)). One or more filtered vents (as described in Section M1-1d(1)) will be installed in the drum lid or body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization.

100-gal (379-L) drums are constructed of mild steel and may also contain rigid, molded polyethylene (or other compatible material) liners. These liners are procured to a specification describing the functional requirements of fitting inside the drum, material thickness and tolerances, and quality controls and required testing. A quality assurance surveillance program is applied to all procurements to verify that the liners meet the specification.

100-gal (379-L) drums may be used as overpacks or may be direct loaded.

Ten-Drum Overpack

The TDOP is a metal container, similar to a SWB, that meets DOT specification 7A and is certified to be noncombustible and to meet all applicable requirements for Type A packaging. The TDOP is a welded-steel, right circular cylinder, approximately 74 inches (in.) (1.9 meters (m)) high and 71 in. (1.8 m) in diameter (Figure M1-5) with a gross internal capacity of 160 ft³ (4.5m³). The maximum loaded weight of a TDOP is 6,700 pounds (lbs) (3,040 kilograms (kg)). A bolted lid on one end is removable; sealing is accomplished by clamping a neoprene gasket between the lid and the body. Filter ports are located near the top of the TDOP. One or more filtered vents (as described in Section M1-1d(1)) will be installed in the ten-drum overpack lid or body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization. A TDOP may contain up to ten standard 55-gal (208-L) drums or one SWB. TDOPs may be used to overpack drums or SWBs containing CH TRU mixed waste. The TDOP may also be direct loaded with waste items (other than derived) that are too large to fit into either the standard 55-gal (208-L) drum, 85-gallon drum, 100-gallon drum or the SWB.

Eighty-Five Gallon Drum Overpack

The 85-gal (321-L) drums meet the requirements for DOT specification 7A regulations. One or more filtered vents (as described in Section M1-1d(1)) will be installed in the eighty-five gallon drum overpack lid or body to prevent the escape of any radioactive particulates and to eliminate any potential of pressurization.

The 85-gal (321-L) drum overpack, which is shown in Figure M1-6, will be used primarily for overpacking contaminated 55-gal (208 L) drums at the WIPP facility.

85-gal (321-L) drums may be direct loaded with CH TRU/CH-TRU-mixed waste and may be used to collect derived waste.

d. 10. Attachment M1-1c(1)

Once unloaded from the TRUPACT-IIs, CH TRU mixed waste containers (3-packs, 7-packs, SWBs, or TDOPs) are placed in one of two positions on the facility pallet. The 3-packs, 7-packs or SWBs are stacked, as they arrive in the TRUPACT-II, on the facility pallets (one- or two-high, depending on weight considerations). The use of facility pallets will elevate the waste approximately 9.5 in. (24 cm) from the floor surface. Pallets of waste will then be relocated to the Northeast (NE) Storage Area of the WHB Unit for normal storage. This NE Storage Area, which is

shown in Figure M1-7, will be clearly marked to indicate the lateral limits of the storage area. This NE Storage Area will have a maximum capacity of seven pallets (1,856 ft³ [52.6 m³]) of TRU mixed waste containers during normal operations. These pallets will typically be staged in this area for a period of up to five days.

In addition, four TRUPACT-IIs, containing up to eight 3-packs, 7-packs or SWBs or four TDOPs, may occupy the staging positions at the TRUDOCK Storage Area of the WHB Unit. If waste containers are left in this area, they will be in the TRUPACT-II shipping container with or without the shipping container lids removed. The volume of waste in containers in four TRUPACT-IIs is 530.4 ft³ (15 m³).

d. 11. Attachment M1-1c(1)

The facility pallet is a fabricated steel unit designed to support 3-packs, 4-packs, or 7-packs of drums, SWBs, TDOPs, or groups of overpack drums, and has a rated load of 25,000 lbs. (11,430 kg). The facility pallet will accommodate up to four 3-packs, 4-packs, or 7-packs of drums or four SWBs (in two stacks of two units), two TDOPs, two groups of overpack drums (maximum of four drums per group), or any combination thereof. Loads are secured to the facility pallet during transport to the emplacement area. Facility pallets are shown in Figure M1-10. Fork pockets in the side of the pallet allow the facility pallet to be lifted and transferred by forklift to prevent direct contact between TRU mixed waste containers and forklift tines. This arrangement reduces the potential for puncture accidents. WIPP facility operational documents define the operational load of the facility pallet as the contents of two TRUPACT-IIs. Since the maximum TRUPACT-II load is 7,265 lbs (3,300 kg), the maximum weight of a loaded facility pallet is less than 19,000 lbs (8,630 kg), including the pallet weight.

d. 12. Attachment M1-1d(1)

The Safety Analysis Report (DOE 1997b) for packaging requires the lids of TRU mixed waste containers to be vented through high efficiency particulate air (HEPA)-grade filters to preclude container pressurization caused by gas generation and to prevent particulate material from escaping. Filtered vents used in CH TRU mixed waste containers (55-gal (208-L) drums, 85-gal (321 L) drums, 100-gal (379 L) drums, TDOPs, and SWBs) have an orifice approximately 0.375-in. (9.53-millimeters) in diameter through which internally generated gas may pass. The filter media can be any material (e.g., composite carbon, sintered metal) as long as the filter VOC diffusion characteristics are equivalent to (or better than) those used in the VOC emission modeling.

d.13. Attachment M1-1d(2)

Each facility pallet has two recessed pockets to accommodate two sets of 7-packs, two sets of 4-packs, two sets of three-packs, or two SWBs stacked two-high, two TDOPs, or any combination thereof. Each stack of waste containers will be secured prior to transport underground (see Figure M1-10). A forklift will transport the loaded facility pallet to the conveyance loading car inside the conveyance loading room located adjacent to the Waste Shaft. The conveyance loading room serves as an air lock between the CH Bay and the Waste Hoist Shaft, preventing excessive air flow between the two areas. The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed off. Containers of CH TRU waste (55-gal (208 L) drums, SWBs, 85-gal (321 L) drums, 100-gallon drums, and TDOPs) can be handled individually, if needed, using the forklift and lifting attachments (i.e., drum handlers, parrot beaks).

d. 14. Attachment M1-1e(1)

The 7-packs, ~~and SWBs~~, 85-gallon drums, 100-gallon drums, and TDOPs in storage will be visually inspected prior to each movement and, at a minimum, weekly, to ensure that the waste containers are in good condition and that there are no signs that a release has occurred. Waste containers will be visually inspected for physical damage (severe rusting, apparent structural defects, signs of pressurization, etc.) and leakage. If a primary waste container is not in good condition, the Permittees will overpack the container. This visual inspection shall not include the center drums of 7-packs and waste containers positioned such that visual observation is precluded due to the arrangement of waste assemblies on the facility pallets. If waste handling operations should stop for any reason with containers located in the TRUDOCK Storage Area in the TRUPACT-II shipping containers, primary waste container inspections will not be accomplished until the containers of waste are removed from the TRUPACT-II. If the lid to the TRUPACT-II inner container vessel is removed, radiological checks (swipes of TRUPACT-II inner surfaces) will be used to determine if there is contamination within the TRUPACT-II. Such contamination could indicate a waste container leak or spill. Using radiological surveys, a detected spill or leak of a radioactive contamination from a waste container will also be assumed to be a hazardous waste spill or release.

d. 15. Attachment M1-1f(1)

M1-1f(1) Secondary Containment Requirements for the WHB Unit

The maximum volume of TRU mixed waste that will be stored in the NE Storage Area of the WHB Unit is seven facility pallets @ ~~4 SWBs~~ 2 TDOPs (direct loaded) per pallet = ~~28 SWBs~~ 14 TDOPs of waste. ~~28 SWBs~~ 14 TDOPs @ ~~496 gal (1,878 L)~~ per SWB 1200 gal (4550 L) per TDOP = ~~13,888 gal (52,570 L)~~ 16,800 gal (63,700 L) waste container capacity. ~~13,888 gal (52,570 L)~~ 16,800 gal (63,700 L) x ten percent of the total volume = ~~1,389, 680 gal (5,263,370 L)~~ 1,680 gal (5,258,370 L) of waste. Since ~~1,389, 680 gal (5,263,370 L)~~ is greater than ~~496~~ 1,200 gal (1,878 4550 L), the volume of the largest single container, the configuration of all ~~SWBs~~ direct loaded TDOPs in the storage area is used for the calculation of secondary containment requirements. ~~1,389, 680 gal (5,258,370 L)~~ L of liquid x one percent liquids = ~~13.9~~ 16.8 gal (52.6 63.7 L) of liquid for which secondary containment is needed.

The maximum volume of TRU mixed waste that will be stored in the Shielded Storage Area of the WHB Unit is one facility pallet @ ~~4 SWBs~~ 2 TDOPs (direct loaded) per pallet = ~~4 SWBs~~ 2 TDOPs of waste. ~~4 SWBs~~ 2 TDOPs @ ~~496~~ 1,200 gal (1,878 4,550 L) per SWB TDOP = ~~1,984~~ 2,400 gal (7,510 9,100 L) waste container capacity. ~~1,984~~ 2,400 gal (7,510 9,100 L) x ten percent of the total volume = ~~198.4~~ 240 gal (751 910 L) of waste. Since ~~198.4~~ 240 gal (751 910 L) is less than ~~496~~ 1,200 gal (1,878 4,550 L), the volume of the largest single container, the volume of the largest container (~~an SWB~~ a TDOP) in the storage area is used for the calculation of secondary containment requirements. ~~496~~ 1,200 gal (1,878 4,550 L) of liquid x one percent liquids = ~~4.96~~ 12 gal (18.8 45.5 L) of liquid for which secondary containment is needed.

d. 16. Attachment M1-1f(2)

The following is a calculation of the surface area the quantities of liquid would cover. Using a conversion factor of 0.1337 ft³/gal (0.001 m³/L) and assuming the spill is 0.0033 ft (0.001 m) thick, the following calculation can be used:

gallons x cubic feet per gallon ÷ thickness in feet = area covered in square feet

NE Storage Area

$$\del{13.9} 16.8 \text{ gal} \times 0.1337 \text{ ft}^3/\text{gal} \div 0.0033 \text{ ft} = \del{563} 680.1 \text{ ft}^2 (\del{52.3} 63.2 \text{ m}^2)$$

Shielded Storage Area

$$4.9612 \text{ gal} \times 0.1337 \text{ ft}^3/\text{gal} \div 0.0033 \text{ ft} = 204.486 \text{ ft}^2 \text{ (18.6745.2 m}^2\text{)}$$

d. 17. Attachment M1, Table M1-2

Table M1-2
WASTE HANDLING EQUIPMENT CAPACITIES

CAPACITIES FOR EQUIPMENT	
CH Bay overhead bridge crane	12,000 lbs.
CH Bay forklifts	26,000 lbs.
Facility Pallet	25,000 lbs.
Adjustable center-of-gravity lift fixture	10,000 lbs.
Conveyance Loading Car	70,000 lbs.
MAXIMUM GROSS WEIGHTS OF CONTAINERS	
Seven-pack of 55-gallon drums	7,000 lbs.
Four-pack of 85-gallon drums	4,500 lbs.
Three-pack of 100-gallon drums	3,000 lbs.
Ten-drum overpack	6,700 lbs.
Standard waste box	4,000 lbs.
MAXIMUM NET EMPTY WEIGHTS OF EQUIPMENT	
TRUPACT-II	13,140 lbs.
Adjustable center of gravity lift fixture	2,500 lbs.
Facility pallet	4,120 lbs.

d. 18. Attachment M2-2b

CH TRU mixed waste containers will arrive by tractor-trailer at the WIPP facility in sealed shipping containers (i.e., TRUPACT-IIs), at which time they will undergo security and radiological checks and shipping documentation reviews. The trailers carrying the shipping containers will be stored temporarily at the Parking Area Container Storage Unit (Parking Area Unit). A forklift will remove the TRUPACT-IIs from the transport trailers and will transport them into the Waste Handling Building Container Storage Unit for unloading of the waste containers. Each TRUPACT-II may hold up to two 7-packs, two three-packs (of 100-gallon drums), two SWBs, or one TDOP. An overhead bridge crane will be used to remove the waste containers from the TRUPACT-II and place them on a facility pallet. Each facility pallet has two recessed pockets to accommodate two sets of 7-packs, two sets of 4-packs, two sets of three-packs, or two SWBs stacked two-high, or two TDOPs. Each stack of waste containers will be secured prior to transport underground (see Figure M2-3). A forklift will transport the loaded facility pallet to the conveyance loading car inside the conveyance loading room adjacent to the Waste Shaft. The conveyance loading car will be driven onto the waste hoist deck, where the loaded facility pallet will be transferred to the waste hoist, and the loading car will be backed off. Containers of CH TRU waste (55-gal (208 L) drums, SWBs, 85-gal (321 L) drums, 100-gal (379 L) drums, and TDOPs) can be handled individually, if needed, using the forklift and lifting attachments (i.e., drum handlers, parrot beaks).

d. 19. Attachment M2-2b

Because the emplacement of CH TRU mixed waste into the HWDUs will typically be in the

order received and unloaded from the TRUPACT-IIs, 3-, or 7-packs of drums, SWBs, TDOPs, and 85-gal (321-L) overpack containers will be emplaced as they arrive (except that 85-gal (321-L) overpacks will only be placed on the top row in the repository). There is no specification for the amount of space + between the waste containers themselves, or between the waste containers and the walls. Containers will be stacked in the best manner to provide stability for the stack (which is up to three containers high) and to make best use of available space. It is anticipated that the space between the wall and the container could be from 8 to 18 in. (20 to 46 cm). This space is a function of disposal room wall irregularities, container type, and sequence of emplacement. Bags of backfill will occupy some of this space. Space is required over the stacks of containers to assure adequate ventilation for waste handling operations. A minimum of 16 in. (41 cm) was specified in the Final Design Validation Report (Appendix D1, Chapter 12 of the WIPP RCRA Part B Permit Application (DOE, 1997)) to maintain air flow. Typically, the space above a stack of containers will be 36 to 48 in. (90 to 122 cm). However 25.5" (0.65m) will contain backfill material consisting of bags of Magnesium Oxide (MgO). Figure M2-8 shows a typical container configuration, although this figure does not mix containers on any row. Such mixing, while inefficient, will be allowed to assure timely movement of waste into the underground. No aisle space will be maintained for personnel access to emplaced waste containers. No roof maintenance behind stacks of waste is planned.

d. 20. Attachment M2, Table M2-1

**Table M2-1
WASTE HANDLING EQUIPMENT CAPACITIES**

CAPACITIES FOR EQUIPMENT	
Facility Pallet	25,000 lbs.
Conveyance Loading Car	36,000 lbs.
Underground transporter	28,000 lbs.
Underground fork lift	12,000 lbs.
MAXIMUM GROSS WEIGHTS OF CONTAINERS	
Seven-pack of 55-gallon drums	7,000 lbs.
Four-pack of 85-gallon drums	4,500 lbs.
Three-pack of 100-gallon drums	3, 000 lbs.
Ten-drum overpack	6,700 lbs.
Standard waste box	4,000 lbs.
MAXIMUM NET EMPTY WEIGHTS OF EQUIPMENT	
TRUPACT-II	13,140 lbs.
Facility pallet	4,120 lbs.

Item 3

Description:

- a. Correct referencing to acronyms to make the text consistent. Correct regulatory references.
- b. Provide new figure (Figure H-1)

Basis:

- a. Typographical and administrative changes to assure consistent referencing to acronyms and to applicable regulatory standards.
- b. Previous permit modification have only indicated the changes to Figure H-1. This modification provides a revised copy of the entire figure.

Discussion:

- a. Because these are administrative in nature, they are Class 1 changes that do not impact the ability of the permit to protect human health and the environment.
- b. Administrative change to provide an updated figure reflecting changes made on previously submitted Class 1 modifications.

Revised Permit Text:

- a. 1. Attachment A-5

Non-mixed hazardous wastes generated at the WIPP, through activities where contact with TRU mixed waste does not occur, are characterized, placed in containers, and stored (for periods not exceeding the limits specified in 20 NMAC 4.1.300 (incorporating 40 CFR §262.34)) until they are transported off site for treatment and/or disposal at a permitted facility. This waste generation and accumulation activity, when performed in compliance with 20 NMAC 4.1.300 (incorporating 40 CFR Part §262), is not subject to RCRA permitting requirements and, as such, is not addressed in the permit.

- a. 2. Attachment B3-1

Nonconformance to **Data Quality Objectives (DQOs)**

For any non-administrative nonconformance related to applicable requirements specified in this Waste Analysis Plan (**WAP**) which are first identified at the site Project Manager signature release level (i.e., a failure to meet a DQO), the Permittees shall receive written notification within five (5) calendar days of identification and shall also receive a nonconformance report within thirty (30) calendar days of identification of the incident. The Permittees shall require the generator/storage site to implement a corrective action which remedies the nonconformance prior to management, storage, or disposal of the waste at WIPP. The Permittees shall send NMED a monthly summary of nonconformances identified during the previous month, indicating the number of nonconformances received and the generator/storage sites responsible.

- a. 3. Attachment B3-5

B3-5 Gas Volatile Organic Compound Analysis

Quality Assurance Objectives

The development of ~~data quality objectives (DQO)~~ **DQOs** specifically for this program has resulted in the QAOs listed in Table B3-2. The specified QAOs represent the required quality of data necessary to draw valid conclusions regarding program objectives. WAP-required limits, such as the program required quantitation limits (**PRQL**) associated with VOC analysis, are specified to ensure that the analytical data collected satisfy the requirements of all data users. A summary of the Quality Control Samples and the associated acceptance criteria is included in Table B3-3. Key data-quality indicators for laboratory measurements are defined below.

a. 4. Attachment B3-15

Section B3-15 - Changes to WAP Related Plans or Procedures

Controlled changes to WAP related plans or procedures shall be managed through the document control process described in the ~~Quality Assurance Program Document (QAPD)~~. The Site Project Manager and the Site Project ~~Quality Assurance Officer~~ **er** shall review all non-administrative changes and evaluate whether those changes could impact ~~data quality objectives~~ **DQOs** specified in the ~~p~~**P**ermit. After site certification, any changes to WAP related plans or procedures that could positively or negatively impact data quality objectives (i. e., those changes that require prior approval of the Permittees as defined in Section B5-2) shall be reported to the Permittees within five (5) days of identification by the ~~P~~**P**roject ~~L~~**L**evel review. The Permittees shall send NMED a monthly summary briefly describing the changes to plans and procedures identified pursuant to this section during the previous month.

a. 5. Attachment E-1a(1)

Underground communication and alarm systems will be arranged to meet the requirements of 30 CFR ~~Part~~ **Part** 57. Telephones or other two-way communication equipment with instructions for their use will be provided for communications from underground to the surface. These communications are typically moved to ensure communications are maintained close to the work areas. Alarm systems capable of promptly warning every person underground, will be provided and maintained in operating condition. If persons are assigned to work areas beyond the warning capabilities of the system, provisions will be made to alert them in a proper manner to provide for their safe evacuation.

a. 6. Attachment I, Introduction

This plan was submitted to the New Mexico Environment Department (**NMED**) and the U.S. Environmental Protection Agency (**EPA**) in accordance with 20 NMAC 4.1.900 (incorporating 40 CFR §270.14(b)(13)). Closure at the panel level will include the construction of barriers to limit the emission of hazardous waste constituents from the panel into the mine ventilation air stream below levels that meet environmental performance standards¹ and to mitigate the impacts of methane buildup and deflagration that may be postulated for some closed panels. The Post-Closure Plan (Permit Attachment J) includes the implementation of institutional controls to limit access and groundwater monitoring to assess disposal system performance. Until final closure is complete and has been certified in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR §264.115), a copy of the approved Closure Plan and all approved revisions will be on file at the WIPP facility and will be available to the Secretary of the NMED or the EPA Region VI Administrator upon request.

a. 7. Attachment I-1

This Closure Plan is prepared in accordance with the requirements of 20 NMAC 4.1.500 (incorporating 40 CFR §Part 264 Subparts G, I, and X), Closure and Post-Closure, Use and Management of Containers, and Miscellaneous Units. The WIPP underground HWDUs, including Panels 1 through 8 and the disposal area access drifts, designated as Panels 9 and 10 on Figure I-1, will be closed to meet the performance standards in 20 NMAC 4.1.500 (incorporating 40 CFR §264.601). The WIPP surface facilities, including Waste Handling Building Container Storage Unit and the Parking Area Container Storage Unit, will be closed in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR §264.178). For final facility closure, this plan also includes closure and sealing of the facility shafts in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR §264.601).

a. 8. Attachment I-1d(3)

As indicated by the closure schedule presented in Figure I-3, the activities necessary to perform facility closure of the WIPP facility will require more than one hundred eighty (180) days to complete because of additional stringent requirements for managing radioactive materials. Therefore, the Permit provides an extension of the 180-day final closure requirement in accordance with 20 NMAC 4.1.500 (incorporating 40 CFR §264.113). During the extended closure period, the Permittees will continue to demonstrate compliance with applicable permit requirements and will take all steps necessary to prevent threats to human health and the environment as a result of TRU mixed waste management at the WIPP facility including all of the applicable measures in Permit Attachment E (~~Procedures to Prevent Hazards~~ Preparedness and Prevention).

a. 9. Attachment I-1e(2)(b)

Surface Container Storage Units

The procedures employed for waste receipt at the WIPP facility minimize the likelihood for any waste spillage to occur outside the WHB. TRU mixed waste is shipped to the WIPP facility in approved shipping containers (e.g., TRUPACT-IIs) that are not opened until they are inside the WHB. Therefore, it is unlikely that soil in the ~~p~~Parking ~~a~~Area Unit or elsewhere in the vicinity of the WHB will become contaminated with TRU mixed waste constituents as a result of TRU mixed waste management activities. An evaluation of the soils in the vicinity of the WHB will only be necessary if a documented event resulting in a release has occurred outside the WHB.

a. 10. Attachment I-1e(2)(d)

The closure of the final underground HWM DU is shown by Activity H in Figure I-3. This closure will be consistent with the description in Section I-1e(1) and the design in Permit Attachment I1. Detailed closure schedules for underground HWDUs are given in Figure I-2 and Table I-1.

b. Attachment H, Figure H-1

The revised Figure H-1 is included in Attachment B.

Item 4

Description:

Correct references to acceptability ranges in Tables

Basis:

Acceptability ranges for matrix spike duplicate samples were mis-stated in three tables in the permit. This modification corrects the requirements.

Discussion:

The above items are Class 1 permit modifications under Section 270.42, Appendix I, A.1. The changes are most appropriately classified as administrative and informational changes.

Revised Permit Text:

- a. Attachment B3, Table B3-5

**TABLE B3-5
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND
FREQUENCIES FOR VOLATILE ORGANIC COMPOUND ANALYSIS**

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action ^a
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet Table B3-4 QAOs	Repeat until acceptable
Laboratory duplicates ^b	One (1) per analytical batch	Meet Table B3-4 precision QAOs	Nonconformance if RPDs > values in Table B3-4
Laboratory blanks	One (1) per analytical batch	Analyte concentrations # 3 x MDLs	Nonconformance if analyte concentrations > 3 x MDLs
Matrix spikes ^b	One (1) per analytical batch	Meet Table B3-4 accuracy QAOs	Nonconformance if %Rs are outside the range specified in Table B3-4
Matrix spike duplicates	One (1) per analytical batch	Meet Table B3-4 accuracy and precision QAOs	Nonconformance if RPDs and %Rs > values and %Rs outside range in Table B3-4
Laboratory control samples	One (1) per analytical batch	80 - 120 %R	Nonconformance if %R < 80 or > 120

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action ^a
GC/MS Calibration	BFB Tune every 12 hours 5-pt. Initial Calibration initially, and as needed	Abundance criteria met as per method Calibrate according to SW-846 Method requirements: %RSD for CCC # 30, %RSD for all other compounds # 15% Average response factor (RRF) used if %RSD # 15, use linear regression if %RSD >15; R or R ² \$ 0.990 if using alternative curve System Performance Check Compound (SPCC) minimum RRF as per SW-846 Method; RRF for all other compounds \$ 0.01	Repeat until acceptable
GC/MS Calibration (continued)	Continuing Calibration every 12 hours	%D # 20 for CCC; SPCC minimum RRF as per SW-846 Method; RRF for all other compounds \$ 0.01 RT for internal standard must be \pm 30 seconds from last daily calibration, internal standard area count must be >50% and <200% of last daily calibration	Repeat until acceptable
GC/FID Calibration	3-pt. Initial Calibration initially and as needed Continuing Calibration every 12 hours	Correlation Coefficient \$ 0.990 or %RSD # 20 for all analytes %D or %Drift for all analytes # 15 of expected values, RT \pm 3 standard deviations from initial calibration	Repeat until acceptable.
Surrogate compounds	Each analytical sample	Average %R from minimum of 30 samples for a given matrix \pm 3 standard deviations	Nonconformance if %R < (average %R - 3 standard deviation) or > (average %R + 3 standard deviation)
Blind audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

^a Corrective Action per section B3-13 when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedances.

^b May be satisfied using matrix spike duplicate; acceptance criteria applies only to concentrations greater than the PRQLs listed in Table B3-4.

MDL = Method detection limit
QAO = Quality assurance objective
PDP = Performance Demonstration Program

%R = Percent recovery
 RPD = Relative percent difference

b. Attachment B3, Table B3-7

TABLE B3-7
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND FREQUENCIES FOR SEMI-VOLATILE ORGANIC COMPOUNDS ANALYSIS

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action ^a
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet Table B3-6 QAOs	Repeat until acceptable
Laboratory duplicates ^b	One (1) per analytical batch	Meet Table B3-6 precision QAOs	Nonconformance if RPDs > values in Table B3-6
Laboratory blanks	One (1) per analytical batch	Analyte concentrations # 3 x MDLs	Nonconformance if analyte concentrations > 3 x MDLs
Matrix spikes	One (1) per analytical batch	Meet Table B3-6 accuracy QAOs	Nonconformance if RPDs and %Rs > values and %Rs outside range in Table B3-6
GC/MS Calibration	DFTPP Tune every 12 hours 5-pt. Initial Calibration initially, and as needed Continuing Calibration every 12 hours	Abundance criteria met as per method Calibrate according to SW-846 Method requirements: %RSD for CCC # 30, %RSD for all other compounds # 15% Average response factor (RRF) used if %RSD # 15, use linear regression if >15; R or R ² \$0.990 if using alternative curve System Performance Check Compound (SPCC) minimum RRF as per SW-846 Method; RRF for all other compounds \$ 0.01 %D# 20 for CCC, SPCC minimum RRF as per SW-846 Method; RRF for all other compounds \$ 0.01 RT for internal standard must be ± 30 seconds from last daily calibration, internal standard area count must be >50% and <200% of last daily calibration	Repeat until acceptable
GC/ECD Calibration	5 pt. Initial Calibration initially and as needed Continuing Calibration every 12 hours	Correlation Coefficient \$ 0.990 or %RSD < 20 for all analytes %D or %Drift for all analytes # 15 of expected values, RT ± 3 standard deviations of initial calibration	Repeat until acceptable

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action ^a
Matrix spike duplicates	One (1) per analytical batch	Meet Table B3-6 accuracy and precision QAOs	Nonconformance if RPDs and %Rs > values in Table B3-6
Laboratory control samples	One (1) per analytical batch	80 - 120 %Rs	Nonconformance if %R < 80 or > 120
Surrogate compounds	Each analytical sample	Average %R from minimum of 30 samples from a given matrix ± 3 standard deviations	Nonconformance if %R < (average %R - 3 standard deviations) or > (average %R + 3 standard deviations)
Blind audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

^a Corrective action per section B3-13 when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedances.

^b May be satisfied by using matrix spike duplicate; acceptance criteria applies only to concentrations greater than the PRQLs listed in Table B3-6.

MDL = Method Detection Limit
QAO = Quality Assurance Objective
PDP = Performance Demonstration Program
%R = Percent Recovery
RPD = Relative Percent Difference

c. Attachment B3, Table B3-9

TABLE B3-9
SUMMARY OF LABORATORY QUALITY CONTROL SAMPLES AND FREQUENCIES
FOR METALS ANALYSIS

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action ^a
Method performance samples	Seven (7) samples initially and four (4) semiannually	Meet Table B3-8 QAOs	Repeat until acceptable
Laboratory blanks	One (1) per analytical batch	# 3 x IDL (# 5 x IDL for ICP-MS) ^b	Redigest and reanalyze any samples with analyte concentrations which are #10 x blank value and \$ 0.5 x PRQL
Matrix spikes	One (1) per analytical batch	Meet Table B3-8 accuracy QAOs	Nonconformance if %R outside the range specified in Table B3-8
Matrix spike duplicates	One (1) per analytical batch	Meet Table B3-8 accuracy and precision QAOs	Nonconformance if RPDs > values and %Rs outside the range specified in Table B3-8
ICP-MS Tune (ICP-MS Only)	Daily	4 Replicate %RSD # 5; mass calibration within 0.9 amu; resolution < 1.0 amu full width at 10% peak height	Nonconformance if %RSD > 5; mass calibration > 0.9 amu; resolution > 1.0 amu
Initial Calibration 1 blank, 1 standard (ICP, ICP-MS) 3 standard, 1 blank (GFAA, FLAA) 5 standard, 1 blank (CVAA, HGAA)	Daily	90-110 %R (80-120% for CVAA, GFAA, HGAA, FLAA) for initial calibration verification solution. Regression coefficient \$ 0.995 for FLAA, CVA, GFAA, MAA	Correct problem and recalibrate; repeat initial calibration

QC Sample	Minimum Frequency	Acceptance Criteria	Corrective Action ^a
Continuing Calibration	Every 10 samples and beginning and end of run	90-110% for continuing calibration verification solution. (80-120% for CVAA, GFAA, HGAA, FLAA)	Correct problem and recalibrate; rerun last 10 samples
Internal Standard Area Verification (ICP-MS)	Every Sample	Meet SW-846 Method 6020 criteria	Nonconformance if not reanalyzed at 5 X dilution until criteria are met
Serial Dilution (ICP, ICP-MS)	One (1) per analytical batch	5 X dilution must be #10% D of initial value for sample > 50xIDL	Flag Data if >10% and > 50xIDL
Interference Correction Verification (ICP, ICP-MS)	Beginning and end of run or every 12 hours (8 for ICP) whichever is more frequent	80-120% recovery for analytes Note: Acceptance Criteria and Corrective Action apply only if interferences found in samples at levels greater than ICS A Solution	Correct problem and recalibrate, nonconformance if not corrected
Laboratory Control Samples	One (1) per analytical batch	Table B3- 8 accuracy QAOs	Redigest and reanalyze for affected analytes; non conformance if not reanalyzed
Blind audit samples	Samples and frequency controlled by the Solid PDP Plan	Specified in the Solid PDP Plan	Specified in the Solid PDP Plan

^a Corrective action per section B3-13 when final reported QC samples do not meet the acceptance criteria. Nonconformances do not apply to matrix related exceedances.

^b Applies only to concentrations greater than the PRQLs listed in Table B3-8.

~~* # 30 percent control limits apply when sample and duplicate concentrations are $\geq 10 \times \text{IDL}$ for ICP-AES and AA techniques, and $\geq 100 \times \text{IDL}$ for Inductively Coupled Plasma - Mass Spectrometry (ICP-MS) techniques. If less than these limits, the absolute difference between the two values shall be less than or equal to the PRQL.~~

IDL = Instrument Detection Limit
PDP = Performance Demonstration Program
PRQL = Program Required Quantitation Limit
%R = Percent Recovery
RPD = Relative Percent Difference

Item 5

Description:

- a. Remove the words "the fence" to clarify the text.
- b. General Employee Training and its associated refresher course are designated with a number that reflects the century (e.g., GET 20X). Previously courses were designated with a "19". These have now been updated to "20".

Basis:

- a. A change to allow room for trucks to maneuver behind the Waste Handling Building resulted in text that was vague. This clarifies the text.
- b. The content of General Employee Training may change from year to year as facility conditions, regulatory conditions, or management policies change. In addition, employees are required to take a General Employee Training refresher course each year. Therefore, it is necessary to use a numbering system that allows the year to be identified. This system previously used "19" as the first two digits of the number. These have now been changed to "20". A permit change is necessary to update the course numbers. No change in the content or amount of training is included, therefore, this change is a Class 1 modification.

Discussion:

- a. This change is most appropriately classified as an administrative and informational change. The item neither substantially alters the permit conditions nor reduces the capacity of the facility to protect the human health and the environment.
- b. This modification updates numerous portions of Attachments H, H1, and H2 to reflect the new General Employee Training numbering system. There are numerous changes since General Employee Training is a prerequisite to many hazardous waste management worker courses. The revised text reflects both the "19" and "20" numbers since many workers satisfied the Initial General Employee Training requirement with a "19" series course. This change is administrative in nature.

Revised Permit Text:

- a. Module II.A.2

The Parking Area Container Storage Unit (**Parking Area Unit**) is an asphalt and concrete surface extending from ~~inside~~ north of the rail sidings to the WHB, within the Controlled Area. The Parking Area Unit shall be enclosed by chain link fence. The Parking Area Unit shall comprise a surface area of no more than 115,000 ft² (10,700 m²), as depicted in Permit Attachment M1, Figure M1-2.

- b. Attachment H1

RCRA Hazardous Waste Management Job Descriptions

Position Title: Sampling Team Assistant

Duties:

- Assists sampling team members in the collection of waste samples for characterization and environmental media for determination of possible releases. Sampling Team Assistant will not respond to hazardous material spills.

Requisite Skills, Experience and Education:

Academic or vocational high school graduate, or equivalent, with courses in algebra and chemistry or biology, plus Associate degree in engineering or science with courses in computer science, or equivalent.

Training (Type/Amount):

General Employee Training (GET-19X/~~GET-20X~~)
General Employee Training Refresher (GET-19XA/~~GET-20XA~~)
Hazardous Waste Worker (HWW-101/102)
Sampling Team Assistant Qualification (STA-01)
Respiratory Protection (SAF 630/631) (Annual)

Item 6

Description:

- a. Make minor administrative changes several procedure in the Permit.
- b. Reformat a procedure that is in the Permit to be more readily useable.

Basis:

- a. Several field procedures are in Attachment P of the permit. These undergo periodic review for consistency with current DOE guidance and to assure effectiveness in field operation. The most recent review resulted in several administrative changes that are reflected in this modification.
- b. Procedure 02 EM3003 has been reformatted to make its use easier. While the procedure has undergone significant revision, the content remains the same. The procedure continues to assure that Environmental Monitoring (EM) personnel have instructions on performing validation and verification of laboratory data containing the analysis results of groundwater samples. This procedure which previously addressed the non-radiological environmental surveillance sampling performed around the WIPP site has been reformatted to be specific to groundwater sampling required by the Permit.

Discussion:

- a. The changes are administrative in nature and therefore are Class 1.
- b. The changes make the procedure more specific with regard to the groundwater monitoring requirements in the permit and result in more consistent review and reporting of data. Therefore, this change is best classified as A.4.a and is a Class 1 modification.

Revised Permit Text:

- a. See Attachment B for the revisions to Procedures WP 02-EM1002 and WP 10-AD3029.
- b. See Attachment B for the revision to Procedure WP 02-EM3003.

Item 7

Description:

Revise several Figures in the Permit to reflect the removal of the Waste Handling Field Office in the Waste Handling Building (WHB), the construction of an airlock between the and the TRUPACT Maintenance Facility (TMF) and the WHB, and the removal of the decontamination structure in the WHB.

Basis:

The WIPP intends to install non-destructive assay and non-destructive examination equipment in the TMF. This equipment will be used to characterize closed containers of off-site waste. In order to facilitate this characterization and the use of the equipment, an airlock is needed between the WHB CH-Bay and the TMF. This modification updates Figures in the Permit to show the location of this airlock as well as the removal of unneeded structures from within the WHB.

Discussion:

The change is informational in nature because it does not change the boundary or size of the WHB container storage unit.

Revised Permit Text:

a. Attachment F

Revised Figure F-10, Figure F-11 are included in Attachment B.

b. Attachment G

Revised Figure G-3 is included in Attachment B.

c. Attachment M1

Revised Figure M1-1, Figure M1-7, and Figure M1-14 are included in Attachment B.

d. Attachment O

Revised Figure O3-3 is included in Attachment B.

Item 8

Description:

Revise the inspection forms for the MSHA Gas Monitoring and the Facility Inspections to remove information that is not needed and not required by the regulations.

Basis:

The inspection form in the Permit contains two columns that are not RCRA requirements and are not needed to conduct and document the inspection effectively. This modification removes these columns and corrects the reference to the applicable procedure.

Discussion:

The change is informational in nature and is therefore a Class 1 change.

Revised Permit Text:

a. 1. Attachment D1, **MSHA GAS MONITORING**

See Attachment B for the revised form.

a. 2. Attachment D1, **Table of Contents**

INSPECTION SHEETS, LOGS, AND INSTRUCTION SHEETS FOR SYSTEMS/EQUIPMENT REQUIRING INSPECTION

TABLE OF CONTENTS

CH TRU Waste Handling

Air-Intake Shaft Hoist
Ambulances and Related Emergency Supplies and Equipment
Surface Ambulance
Underground Ambulances
Adjustable Center of Gravity Lift Fixture
Backup Power Supply Diesel Generators
~~Facility Inspections~~ **RCRA Berm Inspection Report**

a. 3. Attachment D1, Cover Sheet for Form

~~Facility Inspections~~ **RCRA Berm Inspection Report**

a. 4. Attachment D1, **RCRA Berm Inspection Report**

See Attachment B for the revised form.

Item 9

Description:

Revise the inspection form for the 6-Ton Toyota Forklift to update the reference document to the Permit and to add instructions for handling standard waste boxes.

Basis:

The inspection form in the Permit references the draft permit and not the final permit. In addition, the procedure does not include inspection steps for SWB handling equipment.

Discussion:

The change is informational in nature and is therefore a Class 1 change.

Revised Permit Text:

a. Attachment D1, **FORKLIFTS**, WP 05-WH1412

INTRODUCTION

This procedure provides guidance for operating the 6-Ton Toyota Forklifts, 52-H-033 and 52-H-126, at the Waste Isolation Pilot Plant (WIPP). This procedure generates records in the Equipment Logbook.

REFERENCES

BASELINE DOCUMENTS

- 30 CFR 56/57/58, MSHA
- 40 CFR, 264.15, General Inspection Requirements
- Toyota Operator's and Owner's Manual
- LORON, Operators Manual, Warrior Push Pull Model L105542
- WP 04-AD3011, Equipment Tagout/Lockout
- DOE Standard 1090-96, Hoisting and Rigging

REFERENCED DOCUMENTS

- WP 13-QA3003, Corrective Action Program

COMPLIANCE DOCUMENTS

- DOE WIPP 91-005, RCRA Part B Permit Application Hazardous Waste Facility Permit, Waste Isolation Pilot Plant, Permit No. NM489013088-TSDF, issued by New Mexico Environment Department, October 27, 1999

PRECAUTIONS AND LIMITATIONS

- Preoperational Checks are required prior to operating forklift on each shift.
- Only qualified Waste Handling Technician, Engineer or Trainees operating under the direct supervision of a qualified Waste Handling Technician or Engineer are authorized to perform the Waste Handling activities specified in this procedure.
- The forklift is **NOT** to be operated with U/G Ventilation out of service.
- Equipment horn must be sounded whenever:
 - Starting or moving equipment.
 - Approaching an intersection.
 - Encountering an area of limited visibility.
 - Approaching pedestrian(s).
- Exceeding the following load carrying capacities of the 52-H-033 forklift can cause personal injuries or equipment damage:
 - Long Forks: 11,850 lbs at 30 inch load center
 - Short Forks: 13,700 lbs at 24 inch load center
 - LORON: 8,500 lbs at 36 inch load center

- Exceeding the following load carrying capacities of the 52-H-126 forklift can cause personal injuries or equipment damage:

- Long Forks: 11,400 lbs at 30 inch load center
- Short Forks: 13,350 lbs at 24 inch load center
- LORON: 8,250 lbs at 36 inch load center

- When operating forklift, be aware of overhead obstacles at all times.

- To prevent personnel injury, keep hands, feet, and other body parts inside Forklift Operators Designated Area at all times.

- Carrying passengers is prohibited

- During load movements that impair the Forklift Operator's view, a Spotter shall be utilized.

PREREQUISITE ACTIONS

1.0 Verify U/G ventilation is aligned to allow forklift operation.

2.0 If a required inspection becomes delinquent, perform the following:

2.1 Immediately notify RCRA Permitting of the delinquent inspection.

2.2 Schedule and complete the required inspection.

2.3 Document the following in a letter to RCRA Permitting within five working days:

- Schedule for inspection
- Reason(s) why the inspection was not performed
- Any measures taken to offset negative impacts resulting from not performing the inspection
- Actions to prevent further delinquencies

2.4 RCRA Permitting, **GO TO** WP 13-QA3003 , Corrective Actions Program, and determine if a CAR is required.

3.0 Review Equipment Logbook for outstanding deficiencies and Action Requests (ARs).

4.0 Record hour meter reading and equipment number in Equipment Logbook.

PERFORMANCE

1.0 PREOPERATIONAL CHECKS

1.1 Prior to forklift operation at beginning of each shift, inspect the following:

- General condition: **NO** damage, loose parts, oil leaks, water leaks, grease, oil, or trash is/are present
- Seat belts are in good condition
- Tires are in good condition; **NOT** excessively worn or cracked
- All accessible wheel lugs are tight
- Engine oil level is in proper range on dipstick
- Hydraulic oil level is in proper range on dipstick
- Engine coolant level is in proper range in reservoir tank
- Batteries are free from acid spills and have **NO** loose or missing caps or cables
- Fire suppression system intact
- Hydraulic System has **NO** visible leakage from hoses, couplings, or fittings
- Upright and Lift Chains:
 - NO obvious wear, damage, or missing parts
 - NO slack or broken chains

1.2 Verify the following on the applicable attachments:

1.2.1 Forks:

- **NO** obvious cracks, breaks, bends, twists, or wear
 - Correctly installed and locked in the proper position
- 1.2.2 If Push/Pull Fixture is to be used, verify the following:
- **NO** obvious cracks, breaks, bends, twists, or wear exist
 - Hydraulic hoses are **NOT** crushed, damaged, or leaking
 - Fixture is properly secured to forklift
- 1.2.3 If Standard Waste Box (SWB) Attachment is to be used, verify the following:
- **NO** obvious cracks, breaks, bends, twists, or wear
 - Attachment is properly secured to forklift
- 1.3 Remove wheel chocks.
- 1.4 Sit in seat and fasten seat belt.
- 1.5 Adjust seat to provide easy access to all controls.
- 1.6 Verify seat locking mechanism locks.
- 1.7 Verify the following controls are in NEUTRAL:
- Directional Control Lever
 - Hoist Control Lever
 - Tilt Control Lever
 - Side Shift Control Lever
 - Fork Position/Push/Pull Fixture Control button extended (if installed)
 - Push/Pull Fixture control lever (if installed)
- 1.8 Press service brake pedal.
- 1.9 To start forklift, turn key to ON.
- 1.10 Immediately investigate any unusual noises.
- 1.11 Check the following Service Brake characteristic:
- When brake pedal is fully depressed, 3 inches or more clearance exist between the brake pedal and floor plate.
 - Brake pedal is **NOT** springy or spongy, and does **NOT** stick or bind when pressed.
- 1.12 Verify the following:
- All gauge indications show within their normal ranges
 - Sufficient fuel for operation
 - All fault/warning lights off
 - Horn sounds
 - Front lights illuminate
 - Back lights illuminate
 - Hoist Control raises and lowers forks
 - Tilt Control tilts forks forward and backward
 - Side Shift Control moves forks/Push/Pull Fixture from side to side
 - Fork Position Control operates the following:
 - With forks installed, moves forks in and out.
 - With Push/Pull Fixture installed, retracts and extends Clamping Device.

- Parking Brake does **NOT** bind when set or released
- 1.13 Raise forks or attachment 6 to 10 inches above the floor.
- 1.14 Engage parking brake and attempt to move forklift FORWARD and BACKWARD verifying forklift does **NOT** move in either direction.
- 1.15 Release parking brake.
- 1.16 Using Directional Control Lever, select a direction to travel.
- 1.17 Press accelerator pedal and move forklift.
- 1.18 While forklift is moving, check the following:
 - Steering operates smoothly and does **NOT** pull to the right or left
 - Brakes are in good condition and do **NOT** drag
 - Backup Alarm operates while moving in reverse
- 1.19 Stop forklift.
- 1.20 Lower forks/Push/Pull Fixture to the floor.
- 1.21 Set parking brake.
- 1.22 Initiate ARs to address any deficiencies that **CANNOT** be corrected by Waste Handling Operations.
- 1.23 Notify WHE of any deficiencies discovered during Preoperational Checks and the status of each (i.e. deficiencies corrected and AR's generated).
- 1.24 Record the following in Equipment Logbook:
 - Deficiencies noted
 - Addition of oil, water, or other fluids including amount added
 - Corrective action taken (outstanding/newly generated ARs. etc.)
 - If the Push/Pull Fixture or SWB Attachment is used, enter Equipment Number and checks as satisfactory or unsatisfactory
- 1.25 Enter, date, time, and signature in Equipment Logbook to document performance of Preoperational Checks.
- 2.0 FORKLIFT OPERATION
- 2.1 Remove wheel chocks.
- 2.2 Sit in seat and fasten seat belt.
- 2.3 Adjust seat to provide easy access to all controls.
- 2.4 Verify seat locking mechanism locks.
- 2.5 Verify the following controls are in NEUTRAL:
 - Directional Lever
 - Hoist Control Lever

Item 10

Description:

- a. Revise the inspection form for the 6-Ton Bridge Cranes to correct a typographical error and to correct the Crane designation.
- b. Correct misspelled word.

Basis:

- a. The inspection form in the Permit reflects the wrong equipment number for the 6-Ton Bridge Crane used for waste handling. This modification corrects that designation as well as correcting a misspelled word.
- b. A word is misspelled in the Section D.

Discussion:

- a. The change corrects typographical errors and is therefore a Class 1 change.
- b. The change corrects a typographical errors and is therefore a Class 1 change.

Revised Permit Text:

a.1 Attachment D1 **WASTE HANDLING CRANES**, WP 05-WH1407

3.0 If a required inspection goes ~~delinquent~~ **delinquent**, perform the following:

3.1 Immediately notify RCRA permitting of the goes ~~delinquent~~ **delinquent** inspection.

3.2 Schedule and complete the inspection.

3.3 Document the following in a letter to RCRA Permitting within five working days:

the schedule for inspection
the reason(s) why the inspection was not performed
any measures taken to offset negative impacts resulting from not
performing the inspection
actions to prevent further delinquencies

4.0 RCRA Permitting, **GO TO** WP 13-QA3003, Corrective Actions Program and determine if a CAR is required.

PERFORMANCE

1.0 PREOPERATIONAL CHECKS

1.1 Prior to energizing crane, perform the following:

1.1.1 Inspect the following items for obvious wear and damage:

Sheaves
Wire Rope
Hook
Power/Control Cables

1.1.2 Verify wire ropes are wound properly on drum.

1.1.3 Verify Bridge Path is clear of any obstructions.

1.1.4 Verify Trolley Path is clear of any obstructions.

1.1.5 Verify **NO** leakage of oil/grease from crane mechanisms.

NOTE Deficiencies that are corrected when discovered may be considered a satisfactory check.

1.2 Energize the applicable crane as follows:

1.2.1 If operating 6-Ton Crane 41-T-151A, perform the following:

[A] Verify 41P-T-151A 6-TON CRANE EAST LOWBAY W.H.B.breaker on 41P-MCC04/5 is ON.

- [B] Verify 480V DISC. SW. 41P-SW04/36 is ON.
- 1.2.2 If operating 6-Ton Crane 41-T-151B, perform the following:
- [A] Verify 41P-T-151B 6-TON CRANE WEST LOWBAY W.H.B. breaker on 41P-MCC04/5 is ON.
- [B] Verify 480V DISC. SW. 41P-SW04/37 is ON.
- 1.3 Verify Emergency Stop is **NOT** depressed.
- 1.4 Verify joy sticks operate freely and do **NOT** stick.
- 1.5 Turn OFF-ON toggle switch (located on pendant) to ON.
- 1.6 Verify the following:
- Main Screen displays.
DRIVE FAULT message is **NOT** indicated.
- 1.7 **IF** DRIVE FAULT message displays, **THEN** notify WHE before continuing.
- 1.8 Press F1 to turn ON Drive Power and verify the following:
- Display indicates DRIVE POWER ON.
Strobe Light on crane flashes.
- 1.9 Press F4 to select Run (Manual Mode) Screen.
- NOTE** Steps 1.10 through 1.16 may be performed in any order.
- 1.10 Press Left Hand (Hoisting) Joy Stick UP and verify the following:
- Hoist travels UP.
Limit switch stops UP travel.

a.2 Attachment D-1b(1)

Inspections will be conducted in the Parking Area Unit at a frequency not less than once weekly. These inspections are applicable to loaded and stored TRUPACT-IIs. The perimeter fence located at the lateral limit of the Parking Area Unit, coupled with personnel access restrictions into the WHB Unit, will provide the needed security. The perimeter fence and the southern border of the WHB shall mark the lateral limit of the Parking Area Unit. Radiologically controlled area can be established temporarily with barricades. More permanent structures can be installed. The western boundary can be established with temporary barricades since this area is within the perimeter fence. Access to radiologically controlled areas will only be permitted to personnel who have completed General Employee Radiological Training (**GERT**), a program defined by the Permittees, or escorted by personnel who have completed GERT. This program ensures that personnel have adequate knowledge to understand radiological posting they may encounter at the WIPP site. The fence of the Radiologically Controlled Area, south from the WHB airlocks was moved to provide more maneuvering space for the trucks delivering waste. Since waste to be stored in the Parking Area Unit will be in sealed TRUPACT-II shipping containers, there will be no additional requirements for engineered secondary containment systems. Inspections of the TRUPACT-IIs stored in the Parking Area Unit shall be conducted at a frequency no less than once weekly and will focus on the inventory and integrity of the shipping containers and the spacing between trailers carrying the TRUPACT-II shipping containers. This spacing will be maintained at a minimum of four feet.

Item 11

Description:

Revise the permit to include correct corporate references and management personnel and to correct a reference to the NMAC in Attachment B-3b.

Basis:

Revise the permit to include correct corporate references and management personnel. Changes in corporate affiliation were identified to NMED previously by letter. A reference to Section 261 of the NMAC is incorrectly referred to as 4.1.500 instead of 4.1.200.

Discussion:

The change is informational in nature and is therefore a Class 1 change.

Revised Permit Text:

a. 1. Module I

The Secretary of the New Mexico Environment Department (**Secretary**) issues this Permit to the United States Department of Energy (**DOE**), the owner and co-operator of the Waste Isolation Pilot Plant (**WIPP**) (EPA I.D. Number NM4890139088), and the Waste Isolation Division (**WID**) of Westinghouse Electric ~~Government Environmental Services~~ Company LLC, a division of CBS Corporation, the co-operator of WIPP. This Permit authorizes DOE and WID (**the Permittees**) to manage, store, and dispose contact-handled transuranic (**TRU**) mixed waste at WIPP, and establishes the general and specific standards for these activities, pursuant to the New Mexico Hazardous Waste Act (**HWA**), NMSA 1978, §§74-4-1 et. seq. (Repl. Pamp. 1993) and the New Mexico Hazardous Waste Regulations, 20. ~~NMAC~~ 4.1.100 **NMAC** et. seq.

a. 2. Module I.D.3.

"Permittees" means the United States Department of Energy (**DOE**), an agency of the Federal government, and the owner and co-operator of the WIPP facility; and the Waste Isolation Division of Westinghouse Electric ~~Government Environmental Services~~ Company LLC (**WID**), a division of CBS Corporation, and the co-operator of the WIPP facility.

b. Attachment A-1 Facility Description

Abstract

NAME OF FACILITY:	Waste Isolation Pilot Plant
OWNER and CO-OPERATOR:	U.S. Department of Energy P.O. Box 3090 Carlsbad, NM 88221
CO-OPERATOR:	Westinghouse Electric Government Environmental Services Company, LLC Waste Isolation Division P.O. Box 2078 Carlsbad, NM 88221
RESPONSIBLE OFFICIALS:	Keith Klein Inès Triay , Manager DOE/Carlsbad Area Office Joseph L. Epstein, General Manager Westinghouse Electric Government Environmental Services Company, LLC
FACILITY MAILING ADDRESS:	U.S. Department of Energy P.O. Box 3090 Carlsbad, NM 88221
FACILITY LOCATION:	30 miles east of Carlsbad on the Jal Highway, in Eddy County.

TELEPHONE NUMBER: 505/234-7300
 U.S. EPA I.D. NUMBER: NM4890139088
 GEOGRAPHIC LOCATION: 32° 22' 30" N
 103° 47' 30" W
 DATE OPERATIONS BEGAN: 11-26-1999

c. Attachment B-3b

Acceptable knowledge (**AK**) is used in TRU mixed waste characterization activities in three ways:

- C To delineate TRU mixed waste streams
- C To assess whether TRU mixed heterogenous debris wastes exhibit a toxicity characteristic (20. ~~NMAC~~ 4.1.500 **200 NMAC**, incorporating 40 CFR §261.24)
- C To assess whether TRU mixed wastes are listed (20. ~~NMAC~~ 4.1.500 **200 NMAC**, incorporating 40 CFR §261.31)

d. 1. Attachment I1 List of Abbreviations/Acronyms

ACI	American Concrete Institute
AISC	American Institute for Steel Construction
*CFR	Code of Federal Regulations
cm	centimeter
EC	degrees celsius
EF	degrees Fahrenheit
DOE	U.S. Department of Energy
DRZ	disturbed rock zone
EEP	Excavation Effects Program
ESC	expansive salt-saturated concrete
FLAC	Fast Lagrangian Analysis of Continua
ft	foot (feet)
GPR	ground-penetrating radar
Kips	1,000 pounds
m	meter(s)
MB 139	Marker Bed 139
MPa	megapascal(s)
MSHA	Mine Safety and Health Administration
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NaCl	sodium chloride
NMVP	no-migration variance petition
psi	pound(s) per square inch
RCRA	Resource Conservation and Recovery Act
SMC	Salado Mass Concrete
TRU	transuranic
VOC	volatile organic compound(s)
Westinghouse	Westinghouse Electric Corporation Government Environmental Services Company, LLC
WID	Waste Isolation Division
WIPP	Waste Isolation Pilot Plant

d. 2. Attachment I1 Executive Summary

Scope. Under contract to Westinghouse Electric Corporation (**Westinghouse**) now **Westinghouse Government Environmental Services Company, LLC**, Waste Isolation Division (**WID**), IT Corporation has prepared a detailed design of a panel-closure system for the Waste Isolation Pilot Plant (**WIPP**). Preparation of this detailed design of an operational-phase closure system is required to support a Resource Conservation and Recovery Act (**RCRA**) Part B permit application. This report describes the detailed design for a panel-closure system specific to the WIPP site. The recommended panel-closure system will adequately isolate the waste-emplacement panels for at least 35 years.

e. 1. Attachment I1G Section 01010- Summary of Work

Abbreviations/Acronyms

ACI	American Concrete Institute
AISC	American Institute for Steel Construction
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
AWS	American Welding Society
CFR	Code of Federal Regulations
DOE	U.S. Department of Energy
DRZ	Disturbed rock zone
EPA	U.S. Environmental Protection Agency
MB 139	Marker Bed 139
MSHA	U.S. Mine Safety and Health Administration
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
RCRA	Resource Conservation and Recovery Act
SMC	Salado Mass Concrete
USACE	U.S. Army Corps of Engineers
Westinghouse	Westinghouse Electric CorporationGovernment Environmental Services Company, LLC
WID	Waste Isolation Division
WIPP	Waste Isolation Pilot Plant

e. 2. Attachment I1G Section 01090 - Reference Standards

WID	Westinghouse Electric CorporationGovernment Environmental Services Company, LLC Waste Isolation Division Carlsbad, New Mexico 88221
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Item 12

Description:

Revise the hazardous waste codes currently allowable at WIPP to reflect State Hazardous Waste Codes from states outside of New Mexico.

Basis:

The State of New Mexico is unique in that it recognizes hazardous waste codes that are specific to other states. These codes address the same hazardous constituents as do the USEPA hazardous waste codes but allow the states more latitude in developing their waste code descriptions. States such as California, Washington, Texas and others have adopted their own specific coding system for hazardous waste which is generated, transported and disposed within their boundaries. In some cases, these states apply codes to waste constituents that are not considered hazardous under the New Mexico Regulations or the RCRA. In every case, except New Mexico, those state specific codes are not universal as are the Federal hazardous waste codes. In other words, the state specific codes are generally deleted from the Hazardous Waste Manifest once that waste crosses a state's borders. This becomes problematic at WIPP since those State Codes will now be maintained on the Hazardous Waste Manifest.

Discussion:

The addition of a state-specific code to a waste stream does not alter the characteristics of the waste stream. Likewise, it does not result in the need to identify more information about the waste stream to assure that the stream is adequately managed at the WIPP facility. Consequently, the addition of state-specific codes does not change the activities required by the permit except for several conditions related to reporting. Consequently, this modification is considered to be informational in nature and is a Class 1.

Revised Permit Text :

a. Module II.C.4

The Permittees shall accept containers which contain only those TRU mixed wastes listed in the Hazardous Waste Permit Application Part A, Permit Attachment O. **Some of the waste may also be identified by unique state hazardous waste codes. These waste are acceptable at the WIPP as long as the TSDF-WAC are met.**

b. Attachment B Introduction

The hazardous components of the TRU mixed waste to be managed at the WIPP facility are designated in the Permittees' RCRA Part A Permit Application (Permit Attachment O). **Some of the waste may also be identified by unique state hazardous waste codes. These waste are acceptable at the WIPP as long as the Treatment, Storage, or Disposal Facility-Waste Acceptance Criteria (TSDF-WAC) in Module II.C.3 are met..** This WAP describes the measures that will be taken to assure that the TRU mixed wastes received at the WIPP facility are within the scope of the RCRA Part A Permit Application (Permit Attachment O) as established by 20 NMAC 4.1.500 (incorporating 40 CFR §264), and that they comply with unit-specific requirements of 20 NMAC 4.1.500 (incorporating 40 CFR §264.600), Miscellaneous Units.

c. Attachment B-1a

The Permittees will only allow generators to ship those TRU mixed waste streams with **USEPA** Hazardous Waste Codes listed on the Permittees' RCRA Part A Permit Application (Permit

Attachment O). Some of the waste may also be identified by unique state hazardous waste codes. These waste are acceptable at the WIPP as long as the TSDF-WAC are met. The Permittees will perform characterization of all waste streams as required by this WAP. If during the characterization process, new USEPA Hazardous Waste Codes are identified, those wastes will be prohibited for disposal at the WIPP facility until a permit modification has been submitted to and approved by the NMED for these new USEPA Hazardous Waste Codes. Similar waste streams at other generator/storage sites will be examined by the Permittees to ensure that the newly identified USEPA Hazardous Waste Codes do not apply to those similar waste streams. If the other waste streams also require new USEPA Hazardous Waste Code, shipment of these similar waste streams will also be prohibited for disposal until a permit modification has been submitted to and approved by NMED.

d. Attachment B-4b(1)(ii)

The USEPA hazardous waste codes for the wastes that appear on the Waste Stream Profile Form will be compared to those in the Permittees' RCRA Part A Permit Application (Permit Attachment O) to ensure that only wastes that contain constituents contained listed in the Part A are approved for management, storage, or disposal at WIPP. Some of the waste may also be identified by unique state hazardous waste codes. These waste are acceptable at the WIPP as long as the TSDF-WAC are met. Analytical data package summaries will be reviewed by the Permittees to verify that the waste has been classified correctly with respect to the assigned USEPA hazardous waste codes. The analytical method used will be compared to those listed in Tables B-3, B-4, and B-5 to assure that only approved analytical methods were used for analysis of the waste. The Permittees will verify that TSDF-WAC compliance has been met by the generator/storage site.

5. Attachment B6, Table B6-1

Are procedures in place to ensure that the generator/storage site assigns USEPA hazardous waste codes associated with the waste? If so, do these assigned USEPA hazardous waste codes correspond to the permitted USEPA hazardous waste codes on the Part A? Are there any assigned USEPA hazardous waste codes that are not permitted USEPA hazardous waste codes on the Part A? If so, did the generator/storage site reject the waste for shipment to and disposal at WIPP? (Section B-1b) Did the generator assign a state hazardous waste code? If so, is it assigned to waste that is permitted at WIPP?
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Item 13

Description:

Correct references to the Waste Stream Profile Form in the text of the Permit.

Basis:

In a previous modification, the DOE changed the Waste Stream Profile Form to include a reference to the date that the final audit report is approved by the NMED instead of the DOE certification date. This change needs to be reflected in the text of the permit where the Waste Stream Profile Form is discussed. This modification makes the appropriate text changes.

Discussion:

This change makes the permit text consistent with the Figure and is informational in nature.

Revised Permit Text :

a. Attachment B-1d

Every waste stream shipped to WIPP shall be accompanied by a Waste Stream Profile Form (Figure B-1), containing the following information:

- c The generator/storage site's name
- c Original generator of waste stream
- c A description of the waste stream
- c The date of ~~TSDf-WAC certification by the Permittees and the certification document title and date~~ **NMED approval of the final audit report.**

b. Attachment B-4b(1)

The Waste Stream Profile Form is provided as Figure B-1. It includes information on the generator/storage site name and EPA identification number, the technical contact for information on that waste stream, the WIPP ID, Summary Category Group, listing of acceptable knowledge documentation used, and waste characterization batch data report identification numbers associated with that waste stream. The form also requires the date of ~~TSDf-WAC certification~~ **NMED approval of the final audit report** for that waste stream, procedures used for characterization, and EPA Hazardous Waste Code designations. Waste disposal may be initiated upon the Permittees' receipt and approval of the completed Waste Stream Profile Form, including sampling and analysis data. The approved Waste Stream Profile Form will be provided to NMED prior to TRU mixed waste disposal at WIPP.

Item 14 Use of Composited Headspace Gas Data

Description:

Clarify the use of headspace gas data generated using the SW-846 methodology for compositing samples in the laboratory.

Basis:

Tables B-1 and B-3 of the WIPP Permit require that laboratories analyzing headspace gas samples use EPA-specified analytical methods Modified TO-14 or Modified 8240/8260. Method 8260 is an SW-846 method for performing volatile organic compound analysis on samples. Method 8260 is an aqueous method, so the permit requires that a modified Method 8260 be used to account for the analysis of gas samples. Therefore, the discussion of compositing aqueous samples in Section 7.5.7 of Method 8260 is applicable to gas samples. However, the permit does not indicate how the results of the composited data should be applied or how the current data reporting and validation requirements apply to composited results.

This permit modification provides clarification for using headspace gas data generated using the SW-846 method 8260 compositing procedure. This modification provides additional requirements for the use of composited headspace gas data to demonstrate functional equivalence with the existing permit requirements and does not make any changes to existing permit required methods. This permit modification establishes new requirements that ensure data usability and maintain protection of human health and the environment.

Discussion:

Permit section B-3a(1) requires that:

“Every TRU mixed waste container will be sampled and analyzed to determine the concentrations of VOCs (presented in Table B-3) in headspace gases.”

Table B-3 specifies the analytes and methods required for headspace gas sample analysis. One of the allowable methods specified in Table B-3 is a modified SW-846 Method 8260. SW-846 Method 8260 establishes the analytical protocols for determining VOC concentrations in aqueous samples. One of the protocols specified in SW-846 Method 8260 is for compositing samples in the laboratory. Section 7.5.7 describes the procedure for compositing samples prior to GC/MS analysis. The procedure allows for up to 5 samples to be composited and requires that equal volumes of each sample be composited into a glass syringe prior to introducing the sample into the analytical equipment. Because Method 8260 is a method for aqueous samples, the permit requires that a modified 8260 be used to account for analysis of gas samples. Therefore, the compositing methodology provided in Section 7.5.7 is allowable as long as laboratory-specific procedures ensure that the method is modified appropriately to maintain sample integrity for composite gas samples.

Therefore, the modified SW-846 Method 8260 allows for sample compositing under the existing permit. However, the permit does not address how the results of the composited sample analysis should be used. Permit section B-3a(1) states that:

“Headspace-gas samples are used to determine the types and concentrations of VOCs in the void volume of waste containers. Measured headspace VOC

concentrations in waste containers received at the WIPP facility will be compared routinely and in accordance with requirements of Permit Attachment N to ensure that, on an annual basis, there are no associated adverse worker or public-health impacts. In addition, VOC constituents will be compared to those assigned by acceptable knowledge, and the Permittees will assign hazardous waste codes, as warranted.”

Therefore, headspace gas sampling results are used to ensure worker and public health, confirm the hazardous waste code assignment, and assign new hazardous waste codes if necessary.

Worker and public health is ensured by entering individual container headspace gas concentrations into the WWIS and averaging them to compare to the limits established in Module IV. A second level of assurance is maintained by conducting VOC monitoring in accordance with Permit Attachment N. In order to ensure that the data usability is maintained to maintain worker and public health, this modification requires that the composite sample results be assigned to each container used in the composite sample and subsequently entered into the WWIS. In addition, the requirement to assign the results of the composite sample to each of the containers that made up that sample is applicable to any TICs associated with the analytical results.

Confirmation and assignment of hazardous waste codes is performed on a waste stream basis. Section B4-3d specifies the requirements for confirming hazardous waste codes using headspace gas data as follows:

“The Permittees shall require sites to use acceptable knowledge to identify spent solvents associated with each TRU mixed waste stream or waste stream lot. Headspace-gas data will then be used to confirm acceptable knowledge concerning the presence or absence of F-listed solvents and concentration of applicable toxicity characteristic solvents. Sites shall confirm the assignment of F-listed hazardous waste codes (20 NMAC 4.1.200, incorporating 40 CFR §261.31) by evaluating the average concentrations of each VOC detected in container headspace gas for each waste stream or waste stream lot using the upper 90 percent confidence limit (**UCL₉₀**). The **UCL₉₀** for the mean concentration shall be compared to the program required quantitation limit (**PRQL**) for the constituent. If the **UCL₉₀** for the mean concentration exceeds the **PRQL**, sites shall reevaluate their acceptable knowledge information and determine the potential source of the constituent.”

The **UCL₉₀** for the mean concentration is calculated from the headspace gas results following the methodology specified in Section B2-3. Because the **UCL₉₀** is based on the average value across the waste stream, the use of composited headspace gas sample data is equivalent to individual container headspace gas data as long as the containers that are being composited are from the same waste stream. An analysis was conducted that demonstrates that the use of compositing results in a **UCL₉₀** that is equivalent to or more conservative than the **UCL₉₀** that would have been calculated from individual drum results. The paper describing this analysis is attached to this modification.

All QA/QC and tentatively identified compound (TIC) requirements associated with the sampling procedure and the analysis method (e.g., field duplicates, laboratory control samples, etc.) used must be conducted in accordance with the requirements of the permit.

In addition, all reporting and data validation requirements of the permit must be met.

Revised Permit Text:

a. Section B-3a(1)

Every TRU mixed waste container will be sampled and analyzed to determine the concentrations of VOCs (presented in Table B-3) in headspace gases. **If composite samples are used, containers used in the composite sample must be from the same waste stream with no more than 5 containers being included in a single composite sample.** Sampling protocols, equipment, and QA/QC methods for headspace-gas sampling are provided in Permit Attachment B1. In accordance with EPA convention, identification of hazardous constituents detected by gas chromatography/mass spectrometry methods that are not on the list of target analytes shall be reported. These compounds are reported as tentatively identified compounds (**TICs**) in the analytical batch data report and shall be added to the target analyte list if detected in a given waste stream, if they appear in the 20 NMAC 4.1.200 (incorporating 40 CFR §261) Appendix VIII, and if they are detected in 25% of the samples from a given waste stream. The headspace gas analysis method Quality Assurance Objectives (**QAOs**) are specified in Permit Attachment B3.

b. Section B2-3

Once sufficient sampling and analysis has occurred, the waste characterization will proceed. The assessment will be made with 90 percent confidence. The UCL_{90} for the mean concentration of each contaminant will be calculated in accordance with the following equation:

$$UCL_{90} = \bar{x} + t_{\alpha,n-1} \frac{s}{\sqrt{n}} \quad (B2-9)$$

When composite headspace gas sample results are used, the mean, standard deviation and t-statistic are based on the number of samples analyzed, rather than the number of drums sampled. If the UCL_{90} for the mean concentration is less than the regulatory threshold limit, the waste stream will not be assigned the hazardous waste code for this contaminant. If the UCL_{90} is greater than or equal to the regulatory threshold limit, the waste stream will be assigned the hazardous waste code for this contaminant.

c.1 Section B3-5

Completeness

Laboratory completeness shall be expressed as the number of samples analyzed with valid results as a percent of the total number of samples submitted for analysis. **A composited sample is treated as one sample for the purposes of completeness, because only one sample is run through the analytical instrument.** Valid results are defined as results that meet the data useability criteria based on application of the Quality Control Criteria specified in Tables B3-2 and B3-3; and meet the detection limit, calibration representativeness, and comparability criteria within this section. The Permittees shall require that participating laboratories meet the completeness criteria specified in Table B3-2.

c.2. Section B3-10:

An Analytical Batch Data Report or equivalent includes analytical and on-line data from the sampling and analysis of TRU-mixed waste for an analytical batch of up to 20 samples. **Analytical Batch Data Reports or equivalent that contain results for composited headspace gas samples must contain sufficient information to identify the containers that were composited for each composite sample. Because Analytical Batch Data Reports are generated based on the number of**

samples analyzed, an Analytical Batch Data Report may contain results that are applicable to more than 20 containers depending on how many composite samples are part of the report, but may not exceed a total of 20 samples analyzed. Totals/TCLP analyses results and headspace gas sampling and analyses results are in the Analytical Batch Data Reports, which may also include summarized sample results, summarized QA sample results and recoveries, raw data, dates and times of analysis of all samples, and a case narrative describing any problems encountered or deviations from the approved analytical methods that occurred during the preparation and analysis of all samples.

Raw data may include all analytical bench sheet and instrumentation readouts for all calibration standard results, sample data, QC samples, sample preparation conditions and logs, sample run logs, and all re-extraction, re-analysis, or dilution information pertaining to the individual samples. Raw data may also include any qualitative or semi-quantitative data collected for a sample and that has been recorded on a bench sheet or in a log book.

c.3 Section B3-12b(3):

B3-12b(3) WIPP Waste Information System (WWIS) Data Reporting

The WWIS data dictionary contains all of the data fields, the field format and the limits associated with the data as established by the WIPP Treatment, Storage, and Disposal Facility Waste Acceptance Criteria (TSDF-WAC) **this WAP**. These data will be subjected to edit and limit checks that are performed automatically by the database. **If a container was part of a composite headspace gas sample, the analytical results from the composite sample must be assigned as the container headspace gas data results, including any associated TICs.**

Item 15

Leak Testing of Headspace Gas System Components

Description:

Modify the leak check requirement for canisters to allow an equivalent leak rate to be used as the acceptance criterion and provide clarification that positive and negative pressure leak checks are allowable.

Basis:

The WIPP Hazardous Waste Facility Permit requires that a 24 hour leak check be performed on all canisters after cleaning and prior to sample collection. The leak check acceptance requirement is that the canister pressure does not change by more than ± 2 psig in 24 hours. This Permit modification allows an equivalent leak rate to be used for demonstrating compliance with the leak check requirement. Although the language in the Permit implies that both positive and negative leak checks are allowable, due to the performance criterion of ± 2 psig in 24 hours, this Permit modification changes the language in the Permit to clarify that both positive and negative pressure leak checks are allowable. Both of the changes are functionally equivalent change and do not affect data quality or protection of human health and the environment.

Discussion:

The Permit requires that canisters be leak checked to ensure that sample integrity is maintained. This is accomplished by demonstrating that a canister is sufficiently leak tight to ensure that outside air is not introduced into the canister during sample collection. Currently, the Permit requires that this be done over a 24 hour period as is suggested in method TO-14. Methods TO-14, TO-14A, and TO-15 are general use methods that provide guidance for taking time-integrated samples over as much as a 24 hour period and grab samples of ambient air. The methods also provide guidance for subatmospheric sample collection and pressurized sample collection. The guidance for a subatmospheric sample directs that a vacuum be drawn on the sample canister and that the canister valve be opened to allow the pressure differential to draw the sample from the ambient air into the canister until equilibrium is reached and that the valve then be closed. For a pressurized sample the guidance directs that a pump be used to draw in ambient air to fill and pressurize the sample canister to a typical pressure of 15 - 30 psig.

The sampling method used to collect headspace gas samples for the WIPP program, as defined by the Permit, requires a subatmospheric grab sample of the headspace gases within a waste drum. Therefore, it is appropriate that the leak check performed ensures that the sample integrity is maintained for a subatmospheric grab sample. The leak check requirement in TO-14 is designed to provide assurance of sample integrity over the range of sampling possibilities provided in the compendium method (i.e., a sampling time of up to 24 hours and a final sample pressure of up to 30 psig).

Because headspace gas samples for the WIPP program are being collected as subatmospheric grab samples, a leak check duration of 24 hours is not necessary to ensure sample integrity. A leak check that addresses the actual sampling duration will ensure sample integrity. In addition, because the sample in the canister is at equilibrium with the outside atmosphere (i.e., at atmospheric pressure) there is no pressure gradient to induce leakage once the sample is taken. Therefore, a leak test duration greater than or equal to the sampling event is appropriate to demonstrate that sample integrity is

maintained provided a leak rate less than ± 2 psig per 24 hours is met.

Revised Permit Text:

a. Attachment B1-1c(1)

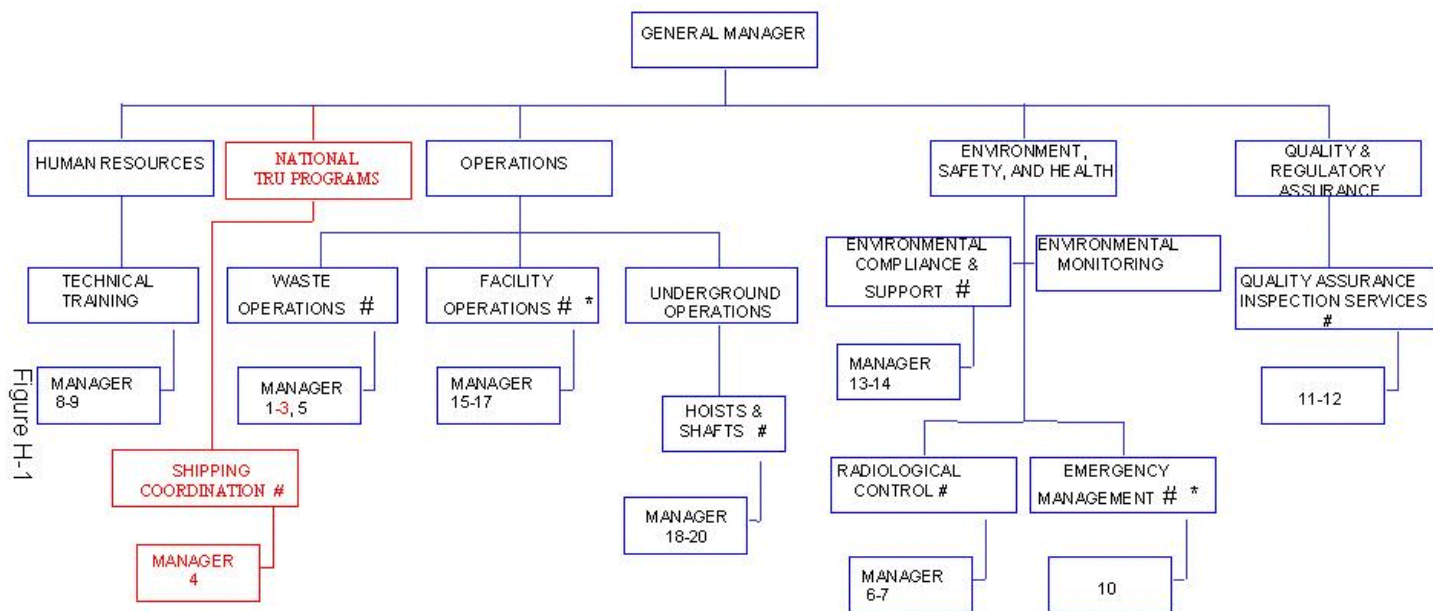
SUMMA® or equivalent canisters used in these methods shall be subjected to a rigorous cleaning and certification procedures prior to use in the collection of any samples. Guidance for the development of this procedure has been derived from Method TO-14 (EPA 1988). Specific detailed instructions shall be provided in laboratory standard operating procedures (**SOPs**) for the cleaning and certification of canisters.

Canisters shall be cleaned and certified on an equipment cleaning batch basis. An equipment cleaning batch is any number of canisters cleaned together at one time using the same cleaning method. A cleaning system, capable of processing multiple canisters at a time, composed of an oven (optional) and a vacuum manifold which uses a dry vacuum pump or a cryogenic trap backed by an oil sealed pump shall be used to clean SUMMA® or equivalent canisters. Prior to cleaning, a ~~24-hour~~ **positive or negative pressure** leak test shall be performed on all canisters. **The duration of the leak test must be greater than or equal to the time it takes to collect a sample, but no greater than 24 hours.** For a ~~pressure-check leak test~~, a canister passes if the pressure does not change by **a rate greater** ~~more~~ than ± 2 psig ~~in~~ **per** 24 hours. Any canister that fails shall be checked for leaks, repaired, and reprocessed. One canister per equipment cleaning batch shall be filled with humid zero air or humid high purity nitrogen and analyzed for VOCs. The equipment cleaning batch of canisters shall be considered clean if there are no VOCs above three times the MDLs listed in Table B3-2 of Permit Attachment B3. After the canisters have been certified for leak-tightness and found to be free of background contamination, they shall be evacuated to 0.0039 in. (0.10 mm) Hg or less for storage prior to shipment. The Permittees shall require the laboratory responsible for canister cleaning and certification to maintain canister certification documentation and initiate the canister tags as described in Permit Attachment B3.

ATTACHMENT B
SUPPORTING INFORMATION

Item 5. b. Revised Figure H-1

Organizational Location of Training, Waste Handling, and Emergency Response



LIST OF HAZARDOUS WASTE MANAGEMENT JOB TITLES

- 1 TRU WASTE HANDLERS
- 2 NON-TRU WASTE HANDLERS
- 3 WASTE OPERATIONS ADMINISTRATIVE ASSISTANT
- 4 WWS DATA ADMINISTRATOR
- 5 MANAGER, WASTE OPERATIONS *
- 6 RADIOLOGICAL CONTROL TECHNICIAN
- 7 MANAGER, RADIOLOGICAL CONTROL *
- 8 TECHNICAL TRAINER
- 9 MANAGER, TECHNICAL TRAINING *
- 10 EMERGENCY SERVICES TECHNICIAN

*SUPERVISORY POSITION
*REPORTS TO VARIOUS GROUPS

- 11 QUALITY ASSURANCE TECHNICIAN
- 12 TEAM LEADER, QUALITY ASSURANCE/INSPECTION SERVICES *
- 13 SAMPLING TEAM MEMBER
- 14 MANAGER, ENVIRONMENTAL COMPLIANCE & SUPPORT *
- 15 OPERATIONS ENGINEER
- 16 FACILITY SHIFT MANAGER *
- 17 CENTRAL MONITORING ROOM OPERATOR
- 18 WASTE HOIST OPERATOR
- 19 WASTE HOIST SHAFT TENDER
- 20 WASTE HOISTING MANAGER *
- 21 HAZARDOUS WASTE WORKER *
- 22 SHIPPING COORDINATION MANAGER*

ORGANIZATION REQUIRING SIGNIFICANT HAZARDOUS WASTE HANDLING TRAINING

* ORGANIZATIONS REQUIRING SIGNIFICANT EMERGENCY RESPONSE TRAINING

Item 6. a. Revised Procedures WP 02-EM1002 and WP 10-AD3029.

Item 6. b. Revised Procedure WP 02-EM3003

Item 7.a
Revised Figure F-10 and Figure F-11

Item 7.b
Revised Figure G-3

Item 7.c
Revised Figure M1-1, Figure M1-7 and Figure M1-14

Item 7.d
Revised Figure O3-3

Item 8.a.1
Revised Inspection Form for
MSHA GAS MONITORING

Item 8.a.4
Revised Inspection Form for
RCRA BERM INSPECTION REPORT

Item 14
Technical Paper
Effects of Compositing on Upper Confidence Limits